97 00763
v. 2

M.H. deYoung Memorial Museum Site Selection Study

APPENDICES

Prepared for The Fine Arts Museums of San Francisco
by Sedway Consulting, ROMA Design Group and Associated Consultants
June 1997

Digitized by the Internet Archive
in 2026 with funding from
State of California and California State Library

https://archive.org/details/C124916632

97 00763
v. 2

M.H. deYoung Memorial Museum Site Selection Study

APPENDICES

Prepared for
The Fine Arts Museums of San Francisco

by
Sedway Consulting

in association with
ROMA Design Group, Rutherford & Chekene
Sedway Group, Swinerton & Walberg, Wilber Smith Associates

June 1997

APPENDICES

Table of Contents

Appendix A: De Young Museum Urban Building and Pavilion Concept Model Programs
Appendix B: Seismic, Structural and Civil Engineering Evaluations
Appendix C: Planning, Urban Design and Institutional Evaluations
Appendix D: Real Estate and Financial Evaluations
Appendix E: Construction and Building Cost Evaluations
Appendix F: Transportation and Circulation Evaluations

APPENDIX A

De Young Museum Urban Building and Pavilion Concept Model Programs

Urban Building Concept
Vertical Plan of 1 Basement & 4 Levels
Footprint Area 60,000 s.f.
Gross Building Area 250,000 s.f.

Level 4 **41,875 s.f. gross**	American & 20th Century Galleries 26,000 sf
	Flexible Exhibition Space 3,000 sf
	Event Area 3,000 sf
	Restrooms 1,000 sf
	Storage 500 sf
Level 3 **43,875 s.f. gross**	Africa, Oceania & Americas 10,000 sf
	Textiles 5,000 sf
	Achenbach 1,000 sf
	Flexible Exhibition Space 3,000 sf
	Collection Study Areas 4,000 sf
	General Administration 11,600 sf
	Storage 500 sf
Level 2 **45,500 s.f. gross**	Temporary Exhibition Galleries 12,000 sf
	Conservation Labs 9,000 sf
	Registration 1,000 sf
	Curatorial Offices 3,000 sf
	Library 8,000 sf
	Teachers' Resource Center 1,000 sf
	Volunteers, Docents, Membership 1,900 sf
	Storage 500 sf
Level 1 **52,750 s.f. gross**	Entry & Information 4,000 sf
	Orientation Galleries 1,500 sf
	Coatcheck & Restrooms 3,000 sf
	Classrooms & Studios 3,000 sf
	Childrens' Gallery 1,000 sf
	Auditorium 4,000 sf
	Education Offices 600 sf
	Event Area 4,000 sf
	Restaurant & Food Service 5,500 sf
	Event Services & Storage 2,000 sf
	Museum Store 4,100 sf
	Loading Dock & Security 5,000 sf
	Storage 500 sf

Basement Level 62,375 s.f. gross	Exhibition Preparation 10,000 sf
	Art Storage 15,000 sf
	Engineering & Custodial 2,900 sf
	Mechanical 20,000 sf
	Plant Storage 2,000 sf

4/2/97

de Young Museum
Urban Building Concept
Program

Museum Functions	Program Area/s.f.	Basement Level	Level 1	Level 2	Level 3	Level 4
Galleries						
Temporary Exhibition	12,000			12,000		
American & 20th Century	26,000					26,000
Africa, Oceania, America	10,000				10,000	
Textiles	5,000				5,000	
Achenbach	1,000				1,000	
Flexible Exhibition	6,000				3,000	3,000
Totals	60,000	0	0	12,000	19,000	29000
Collection Support						
Conservation Labs	9,000			9,000		
Exhibition Preparation	10,000	10,000				
Registration	3,000		2,000	1,000		
Curatorial	3,000			3,000		
Art Storage	15,000	15,000				
Totals	40,000	25,000	2000	13,000	0	0
Education						
Classrooms & Studios	3,000		3,000			
Children's Gallery	1,000		1,000			
Auditorium	4,000		4,000			
Teacher's Resource Cntr	1,000			1,000		
Collection Study Areas	4,000				4,000	
Library	8,000			8,000		
Totals	21,000	0	8,000	9000	4000	0
Public Services						
Entry & Orientation						
Entry, Tickets & Info	6,000		4,000			
Orientation Galleries	1,500		1,500			
Public Areas General						
Coat Check/Restrooms	4,000		3,000			1,000
Event Areas	7,500		4,000			3000
Restaurant/Food Serv.	5,500		5,500			
Event Services/Storage	2,000		2,000			
Museum Store	4,100		4,100			
Totals	26,500	0	24,100	0	0	4,000

de Young Museum
Urban Building Concept
Program

Museum Functions	Program Area/s.f.	Basement Level	Level 1	Level 2	Level 3	Level 4
Public Services Support						
Volunteers	550			550		
Docents	550			550		
Membership	500			500		
Storage	300			300		
Totals	1,900	0	0	1,900	0	0
General Administration						
General Administration	6,200				6,200	
Development	1,500				1,500	
Members/P.R./Pub.	2,400				2,400	
Education	600		600			
Operations	1,500				1,500	
Storage	2,000		2,000			
Totals	14,200	0	2,600	0	11,600	0
Engineering & Plant						
Loading Dock & Security	5,000		5,000			
Engineering & Custodial	2,900	2,900				
Mechanical	20,000	20,000				
Plant Storage	4,000	2,000	500	500	500	500
Totals	31,900	24,900	5,500	500	500	500
Summary						
Total Net Square Feet	199,600	49,900	42,200	36,400	35,100	33,500
x25% circulation, etc.	49,900	12,475	10,550	9,100	8,775	8,375
Total Program Area	249,500	62,375	52,750	45,500	43,875	41,875

de Young Museum
Pavilion Concept Model
150,000 s.f. Footprint

Special Exhibition Pavilion **42,625 sf gross area** **Min. Footprint 21,320 sf** **2 levels above grade**	**Collection Pavilion** **American & 20th Cen.** **42,500 sf gross area** **Min. Footprint 42,500** **1 level above grade**	**Collection Pavilion** **AOA & Textiles** **27,500 sf gross area** **Min. Footprint 27,500 sf** **1 level above grade**	**Administration Pavilion** **38,375 sf gross area** **Min. Footprint 6,400 sf** **6 levels above grade**	**Total Gross Area** **151,000 sf**	**Total Pavilions' Footprint** **97,720 sf**
			Administration 14,200 sf		
			Curatorial 3,000 sf		
Entry & Orientation 5,000 sf			Library 8,000 sf		
Special Exhibitions 12,000 sf			Teachers Res 1,000 sf		
Restaurant/Events 10,500 sf			Classroom 500 sf		52,280 sf
Store 4,100 sf	Entry 3,000 sf	Entry 3,000 sf	Entry/Restrooms 1,000 sf		Courtyards
Children's Gallery 1,000 sf	Galleries 30,000 sf	Galleries 18,000 sf	Registration 1,000 sf		Sculpture Garden
Restrms/Coats 1,500 sf	Restrms/Coats 1,000 sf	Restrms/Coats 1,000 sf	Conservation 2,000 sf		& Expansion Area

GRADE

Below	Auditorium 4,000 sf	Art Storage 15,000 sf	Classrooms 2,500 sf	Registration 2,000 sf		Basement Level 1
Grade	Restrooms/Coats 1,000 sf	Exhibit Prep 10,000 sf	Collection Study 4,000 sf	Loading & Sec. 5,000 sf	Loading &	Parking Access
	Events 2,500 sf	Conservation 7,000 sf	Public Serv. 1,900 sf	Engineering 26,900 sf		45250 sf
	Event Services 2,000 sf		Basement Program Area 104,750 sf (gross)			includes 75 cars
		Parking 150,000 s.f.	425 cars			Level 2
		Parking 150,000 s.f.	425 cars			Level 3

Total Museum Program	255,750
Parking & Loading Access	45,250
Total Parking Program	300,000
Total Building Area	601,000

de Young Museum
Program for Pavilion Concept Model

4/2/97

Museum Functions	Program Area/s.f.	Basement Level	Pavilion 1 Sp. Exhibits	Pavilion 2 Collections	Pavilion 3 Collections	Pavilion 4 Admin.	Program Variance
Galleries							
Temporary Exhibition	12,000		12,000				
American & 20th Century	26,000			26,000			
Africa, Oceania, Americas	10,000				10,000		
Textiles	5,000				5,000		
Achenbach	1,000			1,000			
Flexible Exhibition	6,000			3,000	3,000		
Totals	60,000	0	12,000	30,000	18,000	0	0
Collection Support							
Conservation Labs	9,000	7,000				2,000	
Exhibition Preparation	10,000	10,000					
Registration	3,000	2,000				1,000	
Curatorial	3,000					3,000	
Art Storage	15,000	15,000					
Totals	40,000	34,000	0	0	0	6,000	0
Education							
Classrooms & Studios	3,000	2,500				500	
Children's Gallery	1,000		1,000				
Auditorium	4,000	4,000					
Teacher's Resource Cntr	1,000					1,000	
Collection Study Areas	4,000	4,000					
Library	8,000					8,000	
Totals	21,000	10,500	1,000	0	0	9,500	0
Public Services							
Entry & Orientation							
Entry, Tickets & Info	6,000		4,000	2,500	2,500	500	3,500
Orientation Galleries	1,500		1,000	500	500		500
Public Areas General							
Coat Check/Restrooms	4,000	1,000	1,500	1,000	1,000	500	1,000
Event Areas	7,500	2,500	5,000				0
Restaurant/Food Serv.	5,500		5,500				0
Event Services/Storage	2,000	2,000					0
Museum Store	4,100		4,100				0
Totals	30,600	5,500	21,100	4,000	4,000	1,000	5,000

de Young Museum 4/2/97
Program for Pavilion Concept Model

Museum Functions	Program Area/s.f.	Basement Level	Pavilion 1 Sp. Exhibits	Pavilion 2 Collections	Pavilion 3 Collections	Pavilion 4 Admin.	Program Variance
Public Services Support							
Volunteers	550	550					
Docents	550	550					
Membership	500	500					
Storage	300	300					
Totals	1,900	1,900	0	0	0	0	0
General Administration							
General Administration	6,200					6,200	
Development	1,500					1,500	
Members/P.R./Pub.	2,400					2,400	
Education	600					600	
Operations	1,500					1,500	
Storage	2,000					2,000	
Totals	14,200	0	0	0	0	14,200	0
Engineering & Plant							
Loading Dock & Security	5,000	5,000					
Engineering & Custodial	2,900	2,900					
Mechanical	20,000	20,000					
Plant Storage	4,000	4,000					
Totals	31,900	31,900	0	0	0	0	0
Summary							
Total Net Square Feet	199,600	83,800	34,100	34,000	22,000	30,700	5,000
x25% circulation, etc.	49,900	20,950	8,525	8,500	5,500	7,675	1,250
Total Program Area	249,500	104,750	42,625	42,500	27,500	38,375	6,250

APPENDIX B

Seismic, Structural and Civil Engineering Evaluations

Prepared by Rutherford and Chekene

DE YOUNG MUSEUM SITE RESTUDY

Criterion 1.1: Potential of Site/Building for Safety and Seismic Stability of Asset Protection Level

Technical Memorandum

General (All Sites)

For the purposes of this study we have assumed that the basic seismic performance goals of the New de Young Museum, expressed in terms of limits on damage/loss of their collection, are described as follows:

- In a "Moderate" earthquake of Modified Mercali Intensity (MMI) VI, similar to a repeat of the ground shaking of the Loma Prieta Earthquake experienced at sites in San Francisco, **the goal is to suffer no loss in collection value**.

- In a "Major" earthquake of MMI VII-VIII, similar to the ground shaking expected from a Magnitude 7 earthquake on the mid-peninsula segment of the San Andreas fault or one of the East Bay faults (closest point of fault rupture ±12 miles from the site), **the goal is to suffer no loss in collection value**.

- In a "Great" earthquake of MMI IX+, intended to represent a repeat of the 1906 San Francisco earthquake on the Northern California segment of the San Andreas fault (closest point of fault rupture ± 5 miles from the site), **the goal is to have no loss of collection value in storage and a loss of less than 1% of collection value on display**.

These goals have been established with the intent to provide the highest level of seismic safety for the collection. In order to achieve these goals at any site in San Francisco, museum buildings housing the collection must provide a very high level of seismic performance.

Special, performance-based seismic design criteria, exceeding normal building code provisions, will be required and will affect the design of all major building systems (structural, architectural, mechanical/climate control, electrical, fire protection, etc.). Proper implementation of this type of multi-level performance-based design will entail considerably greater effort by the design than would be required by typical, Code-based design, requiring higher than normal design team fees (refer to Criteria 9.1). In addition, the Department of Building Inspection will convene a Seismic Advisory Committee, to perform peer review of the building's design (refer to Criteria 9.1).

The structural lateral force resisting system for the new museum building(s) must be very strong, very stiff, very ductile, and highly redundant; basic properties which can be achieved with conventional concrete shear wall and steel diagonal braced frame systems. However, the potential use of some form of structural building response modification, such as installation of supplemental damping devices or seismic isolator bearings, should be considered at all sites. In addition, building configuration irregularities, in particular vertical discontinuities in the primary lateral force resisting system, should be avoided. Thus, upper level setbacks must be compatible with the vertical elements of the structural framing system. There are no conditions at any of four sites being studied which preclude construction of appropriate structural lateral force resisting systems.

A complete program of conventional supplemental art object protection measures should be installed for all pieces vulnerable to seismic shaking. These measures should provide reliable seismic performance for artwork stored in the basement and displayed on the ground floor level. However, the performance of conventional art object protection systems may be somewhat uncertain at the second floor level, and unreliable at higher building levels, due to the amplification of seismic response (floor accelerations and shaking) expected. If seismically vulnerable artwork will be displayed on the second floor, more sophisticated (hi-tech) art object protection measures could be employed for significant pieces, to provide greater assurance of achievement of the desired level of seismic protection. If vulnerable artwork will be displayed or stored on higher floor levels in a mid-rise, urban building, use of seismic isolation and/or supplemental damping systems will very likely be required.

Golden Gate Park Site *(From 12/95 Site Selection Study with minor editing)*

Site Conditions: The proposed site is presently occupied by the current M.H. de Young and Asian Art Museums. Existing underground construction includes foundation and utility structures connected with the existing museum buildings, the basement level of the Asian Art Museum, and the drilled piers installed as part of the temporary seismic bracing of the existing buildings housing the M. H. de Young Museum.

The generalized soil profile consists of approximately five to ten feet of medium dense silty sand with brick fragments and other debris in some locations. This material is believed to have been placed artificially. The artificially placed material is underlain by loose to dense poorly graded sand. Bedrock is estimated to be at a depth between 150 and 200 feet. Based on these soil conditions, the site has a UBC soil profile classification of S1. Groundwater was not encountered to a depth of exploration of about 40 feet. Based on preliminary information, the potential for encountering hazardous materials on this site is low.

The site is located outside the Alquist-Priolo Special Studies Zone, implying that the potential for ground rupture due to fault displacement is low. In keeping with the seismicity of the region, very strong ground shaking should be expected during a major earthquake. The nearest expected source of such an earthquake is the San Andreas fault, located some 5 miles to the southwest of the site. Because of the proximity of the fault, an earthquake centered on the fault can be expected to produce near-field groundmotion effects on the site.

The site has a high potential for experiencing compaction settlement in the event of a major earthquake because of the presence of a loose to medium dense sands in upper (10-15 feet) layers.

Seismic Performance/Stability: The proposed building can be supported on spread footings bearing in dense sand below the basement levels. At portions of the building without basements, where foundations are bearing on less dense sands, interconnected grade beams may be required between the individual footings. The footings may have to be formed because of the high potential for footing excavation to cave. At areas where construction of one or two level basements occurs, all the upper soil layers susceptible to compaction settlement would be removed, thereby eliminating the potential for this hazard. However, pavements, utility services and other surface construction adjacent to the building may still be affected. Excavation for the footings, the basements, and the tunnel leading to the basement can be performed with conventional excavation equipment and conventional shoring can be used to support the excavation walls. Construction of the tunnel will impact traffic and utilities in the area.

This site poses no significant restrictions or constraints to the construction of the building's superstructure. The building may be either a reinforced concrete or steel framed structure. The only significant structural concern posed by this site is the very strong to severe level of seismic ground shaking expected in a major earthquake. Assuming the new museum will likely be a two story building, the following ranges of horizontal accelerations can be expected: 0.4-0.6g at the first (ground) floor level, 0.9-1.0g at the second floor level, and 1.4-1.5g at the third floor/roof level. In addition, the near-field effects expected at this site could include significant impulsive loading. Structural response modification, perhaps using a combination of seismic isolation and supplementary damping devises, should be considered.

Fremont Square (Transbay) Site *(from SMWM Study with minor editing)*

Site Conditions: For discussion of site conditions, suitable foundation systems, and excavation/shoring conditions, refer to the Preliminary Geotechnical Evaluation dated 4/23/97 prepared by Treadwell & Rollo. In addition, ground level floor slabs in buildings without basements must be designed as suspended floors (instead of slabs on ground) to span over pockets of softer soils or areas which may experience densification and/or consolidation settlements during an earthquake. This condition most likely applies to basement level slabs as well. All basement walls and floors will need to be adequately waterproofed.

CalTrain Extension: The below ground terminal for the potential CalTrain extension project occurs on this site. Museum construction may occur over the footprint of the station, provided that the station structure is designed to accommodate the superimposed building loads and is constructed before the museum buildings overhead. In this event, the following issues must be considered:

- Since it is unlikely that the column grid for the museum buildings will fit with the platform and track layout of the station below, the roof of the station will need to be designed to transfer museum column loads to the station column grid and foundations. Also, cost-sharing for this structural transfer system will need to be addressed.

- Unless the station is constructed considerably deeper than is currently proposed, buildings over the station will not have basements. In addition, below ground tunnels linking separate buildings will be interrupted by the station box.

- Monolithic concrete structures are very good conductors of both noise and vibrations. Since trains will be traveling at very slow speeds in the terminal, vibrations associated with moving trains will not be an issue. However, vibrations caused by idling or revving locomotive engines and noises from various sources (engines and people) will require some form of mitigation. Mitigation measures may include one or more of the following: extensive sound insulation, isolation mounts for the tracks in the station, vibration isolation of the museum floor directly over the station, or isolation of the museum structure from the supporting station structure.

- Special measures will be required to protect museum buildings, especially gallery, exhibition, and other public spaces, from the however unlikely event of fire and/or explosion in the train station below.

Adaptive Re-use of Existing and/or Historic Buildings: Re-use of existing buildings on this site will almost certainly require their seismic upgrade and will probably require underpinning during construction of adjacent basement construction. Furthermore, re-use for most museum functions will likely involve a change of occupancy, which may trigger seismic and/or other strengthening, even if an upgrade (say to comply with the current Unreinforced Masonry Building (UMB) Ordinance) has already been done. Also, even an upgraded UMB will not be an appropriate structure to house any of the museum's collection. Finally, existing floor levels will almost certainly not match new museum floor-to-floor levels, requiring ramps or some other type of floor level reconciliation.

Seismic Performance/Stability: There are no constraints, other than those noted above, affecting the construction of the proposed above ground structures on this site. The only significant structural concern is the strong level of seismic ground motion which is expected to occur at the site in a major earthquake. In such an event, the horizontal ground motion accelerations expected at this site are in the range of 0.35-0.6g. In a conventional building structure, horizontal accelerations are expected to exceed 1.0g at the third floor level and above.

In order to assure achievement of the desired level of seismic protection for the collection, either the higher floor levels should not be used for art storage and display, or some form of structural building response modification, such as installation of supplemental damping devices or seismic isolator bearings at the ground level, may be required. Installation of either is feasible at this site, including at structures located above an underground train station.

Mid-Embarcadero (Blocks 202-203) Site *(from 12/95 Site Selection Study with editing)*

Site Conditions: The proposed site is presently covered by landscaping and a few minor site structures. On- and off-ramps of the demolished Embarcadero Freeway terminated on the site. A post office annex building, since demolished, was once located on the north side of the site. Existing underground construction includes, abandoned piles, pile caps, and abutments of the demolished freeway ramp structures and the abandoned foundations of the old post office building.

Based on Caltrans borings from the Embarcadero freeway alignment, the generalized soil profile consists of approximately 15- to 20-foot thick loose to medium dense fill overlying approximately 40- to 60-foot thick Bay Mud. These layers are underlain by alluvial soils consisting of loose to dense sands and clayey sands, and very stiff sandy clay and clayey silt. Bedrock is estimated to be at a depth of at least 170 feet. Based on these soil conditions, the site has a UBC soil profile classification of S4. Groundwater is estimated to be at a depth of between 10-15 feet. Based on preliminary information, the fill has a high potential of containing regulated (contaminated) materials.

The site is located outside the Alquist-Priolo Special Studies Zone, implying that the potential for ground rupture due to fault displacement is low. In keeping with the seismicity of the region, strong ground shaking should be expected during a major earthquake. The nearest expected source of such an earthquake is the San Andreas fault, located some 8.5 miles to the southwest of the site. Although an earthquake centered on the fault will not produce near-field groundmotion on the site, the groundmotion is expected to be high.

The potential for compaction settlement and liquefaction of the fill material, in the event of a major earthquake, is high because of the presence of the loose to medium dense sands in the upper layers.

On this waterfront site, the potential of archaelogical discoveries cannot be discounted, and their impact on the project must be considered.

Seismic Performance/Stability: The proposed buildings can be supported on precast, prestressed concrete piles bearing in dense sands below the layer of Bay Mud. Pile driving would be impacted by potential obstructions such as abandoned piles and rubble in the fill layer. Piles can be driven after full or partial excavation of the basement. If the basement is excavated partially, a follower will be needed to drive the top of pile below grade. If the basement is fully excavated, groundwater will impact the driving operations. Groundwater will also impact basement construction as discussed below.

Because of the proposed basement construction, most of the upper soil layers susceptible to compaction settlement and liquefaction would be removed thereby minimizing the potential for these hazards to affect the lateral capacity of the piles. These hazards, however, are likely to impact flatwork and utilities around the building. Flexible connections will be required where utilities enter the building. The cost of excavation should include the cost of disposal of contaminated fill materials.

Excavation for the basement can be performed with conventional excavation equipment. Sheet piling, extending 15 feet or more below the bottom of the excavation, may be required to minimize the impact of groundwater and Bay Mud on the stability of the excavation. Dewatering with wellpoints is not an option on this site because of the potential impact of such dewatering on settlement of adjacent improvements. Tiebacks cannot be used to provide lateral stability for shoring; the excavation would have to be braced. Slurry wall construction, in lieu of sheet piling, could be used for temporary and permanent support of the excavation. Basement walls will need to be adequately waterproofed.

Use of the Soil Mixed Wall (SMW) technique, may provide a more economical approach to temporary support of the basement excavation. In this approach, a series of interconnected, large diameter (±5') piers or caissons of cemented soils is placed by a drilling process, around the perimeter of the excavation, to a depth of about 15-20 below the bottom of excavation. Then, the piles are driven from existing grade with followers. Stability of the bottom of the excavation is provided by jet-grouting a waste mat slab at the desired depth inside of the perimeter wall. When the soils are excavated, the soil mixed wall provide temporary support by cantilevering vertically above the jet-grouted waste slab (each caisson may be reinforced by installing a steel wide flange section if required at deeper excavations).

There are no constraints, other than possible height limits, affecting the construction of the proposed above ground structures on this site. The building may be either a reinforced concrete or steel framed structure. The only significant structural concerns are the strong level of seismic ground motion which is expected to occur at the site in a major earthquake and the possibility that the museum buildings may need to be mid-rise due to the relatively small site footprint available. The following ranges of horizontal accelerations can be expected: 0.35-0.55g at the first (ground) floor level, 0.75-0.9g at the second floor level, and greater than 1.25g at the third floor and higher levels. If the new museum building is taller than two stories, either the higher levels should not be used for art storage or display, or structural response modification (isolation and/or supplemental damping) should be used. Installation of either is feasible at this site.

Broadway @ Waterfront Site

Site Conditions: Based on Caltrans borings from the Embarcadero freeway alignment, the generalized soil profile consists of approximately 20- to 30-foot thick loose to dense fill, overlying about 60 feet of Bay Mud, which is in turn underlain by very stiff clay, sandy clay with gravel, and silty clay. Franciscan bedrock is at least 120 feet below ground surface.

The fill on this site largely predates the 1906 earthquake. Therefore, it consists mostly of clean sands. However, some limited amounts of the upper portions of the fill may contain regulated (contaminated) materials.

The Embarcadero Freeway ramp structure traversed this site. Two existing one- and two-story buildings presently exist on the site. Existing underground construction includes the abandoned pile and pile cap foundations from the demolished freeway piers and the timber pile foundations of the existing buildings.

The site is located outside the Alquist-Priolo Special Studies Zone, implying that the potential for ground rupture due to fault displacement is low. In keeping with the seismicity of the region, strong ground shaking should be expected during a major earthquake. The nearest expected source of such an earthquake is the San Andreas fault, located some 8.5 miles to the southwest of the site. Although an earthquake centered on the fault will not produce near field groundmotion on the site, the groundmotion is expected to be high.

The potential for compaction settlement and liquefaction of the fill material, in the event of a major earthquake, is high because of the presence of the loose to medium dense sands in the upper layers.

On this waterfront site, the potential of archaelogical discoveries cannot be discounted, and their impact on the project must be considered.

Seismic Performance/Stability: All comments contained under this same heading for the Mid-Embarcadero site apply to this site as well except that the cost of disposal of contaminated fills will be much lower.

If any of the existing buildings on the site are to remain, their retention will almost certainly require underpinning during construction of adjacent basement construction and the risk of damaging them will be high. Re-use for most museum functions will likely involve a change of occupancy, which may trigger seismic and/or other strengthening, even if an upgrade (say to comply with the current Unreinforced Masonry Building (UMB) Ordinance) has already been done. Also, even an upgraded UMB will not be an appropriate structure to house any of the museum's collection. Finally, existing floor levels will almost certainly not match new museum floor-to-floor levels, requiring ramps or some other type of floor level reconciliation at any interconnections.

Criterion 9.5: Limiting Cost and Delay in Securing Adequate Utilities

Technical Memorandum

General

Utility Investigations: Since there is no single San Francisco agency that maintains drawings of all the existing subsurface utilities in City streets, we visited each of the three downtown sites (we did not investigate the Golden Gate Park site) to seek surface indications of subsurface utilities, such as valves, manholes, hydrants, pullboxes, trench pavement repairs and paint marks. We also contacted the following agencies and companies to request copies of their utility drawings in study areas:

S F Water Department	Domestic Water
S F Dept. of Public Works	Sewers
S F Dept. of Public Works	High Pressure Fire Protection
Pacific Gas & Electric	Gas & Electric
Hetch Hetchy Bureau of Light Heat & Power	Electric
Bell Telephone	Telephone
MCI	Telephone
San Francisco Thermal	Steam

To date, we have received responses only from the San Francisco Water Department and San Francisco Thermal.

Seismic Threat to Off-Site Utilities: There is a risk that off-site utility services, such as the City's domestic water service mains, high pressure fire mains, and any other buried utilities which pass through areas of potential soil liquefaction, could fail in the event of a major earthquake. Failure of off-site utilities could leave the Museum without services essential for protection of the collection, such as a water supply to protect the Museum in the event of a fire following a severe earthquake, for several days to a week. Although all four sites are surrounded by areas subject to liquefaction, the Golden Gate Park site is the least vulnerable and the two waterfront sites are the most vulnerable to this risk. Consideration should be given to providing on-site emergency backup, in excess of code requirements, for any utility services which are deemed essential to protect the collection in a post-earthquake disaster. These may include providing emergency power generation and either on-site water storage or emergency pumping capability to allow use of nearby water sources such as the Bay and Stowe Lake.

Golden Gate Park Site

Utility Services: No specific investigations were made at this site. We assume that the current museum site is served adequately.

Fremont Square (Transbay) Site

Utility Services: The site is well served by utilities, including domestic water, combined sewer, power, communications, and the City's high pressure water fire protection system. In addition, San Francisco Thermal (a private company) has a steam main in Second Street and has expressed an interest in providing service to the Transbay site. Both capital and operating cost savings could probably be realized with steam service.

Utility Relocations: There is a water main, a sewer, and a telephone line in Natoma Street in the Transbay site area. If the Museum's plan for the development of this site includes a basement or tunnel under Natoma Street, consideration will have to be given to relocating these utilities and/or protecting them.

Mid-Embarcadero (Blocks 202-203) Site

Utility Services: The site is well served by utilities, including domestic water, combined sewer, power, communications, and the City's high pressure water fire protection system. Block 203 is also close to some of San Francisco Thermal's lines that possibly could be extended to serve the Museum. Steam service could probably result in both capital and operating cost savings.

Utility Relocations: There are numerous utilities in Drumm Street. Although, the current concept for the Mid-Embarcadero site indicates a bridge spanning over Drumm Street, provision of a tunnel under the street will have an impact on these existing utilities.

We observed many PG&E manholes in the park between Drumm Street and the Embarcadero, indicating the presence of underground power lines and related facilities. These facilities may require relocation depending on the configuration of proposed construction on those portions of the site. It should be noted that the terms of the City's encroachment permits for private utilities usually require the utility to bear the cost of relocation should it prove necessary.

There is an existing sewage pump station at the southwest corner of the intersection of Drumm Street and Washington Street. We have been informed that it is abandoned, so it can be demolished if necessary for the development of the site for the Museum.

Broadway @ Waterfront Site

Utility Services: The site is well served by utilities, including domestic water, combined sewer, power, communications, and the City's high pressure water fire protection system.

Utility Relocations: There is a sewer, a water main, and numerous other utilities in Davis Street. If Davis Street is closed as the current concept indicates, these utilities will have to be relocated and/or protected.

Summary Statements

Criterion 1.1 - Seismic Stability & Asset Protection:

Golden Gate Park: Severe seismic shaking; shallow foundations; conventional excavation support.

Fremont Square: High seismic shaking; deep pile foundations; special excavation support & dewatering; potential CalTrain extension.

Mid-Embarcadero: High seismic shaking; deep pile foundations; special excavation support & dewatering.

Broadway @ Waterfront: High seismic shaking; deep pile foundations; special excavation support & dewatering.

Criterion 9.5 - Utilities:

Golden Gate Park: Adequate existing services; liquefaction risk to off-site services.

Fremont Square: Adequate services and nearby steam; liquefaction risk; potential relocations.

Mid-Embarcadero: Adequate services; liquefaction risk; potential relocations; abandoned pump station.

Broadway @ Waterfront: Adequate services; liquefaction risk; potential relocations.

Judgments

Criterion 1.1 - Seismic Stability & Asset Protection:

Golden Gate Park: Good

Fremont Square: Average

Mid-Embarcadero: Average

Broadway @ Waterfront: Average

Criterion 9.5 - Utilities:

Golden Gate Park: Good

Fremont Square: Good

Mid-Embarcadero: Good

Broadway @ Waterfront: Good

APPENDIX C

Planning, Urban Design and Institutional Evaluations

Prepared by Sedway Consulting

INTRODUCTION

The following assessments have been made on criteria determined to be of a planning, urban design or planning implementation character. The judgments have been made on an empirical basis, involving either site observations, data, or other information.

Criterion 1.6: Ability of Site/Building to Assure Optimum Security of Art Collection

Golden Gate Park
Security has been an issue at this site, particularly during nighttime hours, due to the secluded nature of the park. The site is within statistical subarea 757 of the Richmond Police District. According to San Francisco Police Department reports for 1995, this statistical area had 405 reported major offenses, more than double any other subarea in the Richmond Police District. However, Area 757 is one, but not the largest, of the Richmond subareas in terms of land area. (Major offenses include homicide, rape, robbery, assault, burglary, grand theft, motor vehicle theft, purse-snatch, and petty theft.) Out of the 503 subareas in the city, this subarea ranked 8th highest in number of thefts, 16th highest in number of auto thefts, and 19th highest in reported major offenses for 1995. There were no homicides reported.

Summary: Less than optimum security; secluded site.

Transbay Site
Despite its perception as a potentially unsafe location, this site has not experienced particularly high levels of crime. The site is within statistical subarea 226 of the Southern Police District. According to San Francisco Police Department reports for 1995, this statistical area had 165 reported major offenses. Out of 503 subareas throughout the entire city, this subarea ranked 94th highest in the number of auto thefts, 99th highest in thefts, and 107th in the number of reported major offenses for 1995. There were no homicides reported in this subarea during this period.

Summary: Adequate security; highly visible site.

Mid-Embarcadero
The adjacency of the Embarcadero Center and the Golden Gateway should enhance the area's security. This site is within statistical subarea 154 of the Central Police District. The subarea had a reported 187 major offenses for 1995, according to the San Francisco Police Department. Out of 503 subareas throughout the entire city, this subarea ranked 57th highest in the number of thefts, 92nd highest in reported major offenses, and a low 487th in auto thefts for 1995. There were no homicides in this subarea during this period.

Summary: Adequate security enhanced by adjacent sites.

Broadway/Embarcadero

Although somewhat removed from San Francisco's financial district, this site is neighbored by North Waterfront offices, the ABC building, and the Golden Gateway. This site is within statistical subarea 134 of the Central Police District. According to the San Francisco Police Department, the subarea had a reported 120 major offenses for 1995, the fewest of the four potential de Young sites. Out of 503 subareas throughout the entire city, this subarea ranked 114th highest in the number of thefts, 165th in reported major offenses, and 210th in auto thefts for 1995. There were no homicides reported in this subarea during this period.

Summary: Most secure site; somewhat removed from downtown activities.

Criterion 4.2: Adequacy of Ambient Light

Golden Gate Park

The facade of the existing museum faces south, and the front of the museum receives considerable direct sunlight. This direct light is largely blocked by the design of the building, which has few windows facing south. The surrounding trees are behind and to the east of the building, and hence do not provide any blockage of direct sunlight. However, there is a blockage of direct north light to a limited extent, which serves to darken the museum.

Summary: No blockage; trees at north.

Transbay District

The Mission Street frontage facing north has a major building directly to the front. Another skyscraper is to the west at the corner of First and Mission; this will cast afternoon shadows in the middle of the summer. The predominant exposure to the south is devoid of tall buildings currently allowing full sunlight; however, the allowable height zoning which will apply, unless and until the area is rezoned or placed in a redevelopment area, ranges from 200 to 400 feet The future redevelopment plans suggest that there will be major tall buildings to the east as well.

Summary: Variable massing, although redevelopment plan would allow tall buildings in vicinity.

Mid-Embarcadero

Massive Embarcadero Center to the south, Maritime Plaza to the west, and Golden Gateway to the north bracket the site, offset to some extent by totally open water view to the east. Block 203 would receive direct sunlight only sporadically in winter. However, the front of Block 202 would receive considerable sun at all times, as would entire site for four months of year. Moreover, shadowing studies reveal that the two blocks in the aggregate average substantial sunlight except for winter months. Proposition K would impact the site's building height due to the potential impact on Maritime Plaza's podium park.

Summary: Skyscrapers on three sides; limited direct sunlight in winter; open to east.

Broadway/Embarcadero
Open exposures will exist on all sides. Gateway Commons represents a massing consistent with the scale of the museum. Limited zoning allowance precludes future blockages. Expansive open water view to the east enhances ambient light.

Summary: No building mass except Gateway Commons; constant direct sunlight.

Criterion 4.3: Allow Museum to Create/Project its Identity and Reflect the Image of Welcoming Diverse Audiences

Golden Gate Park
Site remains confined to preexisting footprint, including Asian Art Museum's, which will be moving. Historic original site provides identity and imageability. Park setting enhances image of welcoming audiences as diverse as park users. Potential conflict with natural setting limits design expression, including verticality.

Summary: Historic site; natural constraints; diversity of park users

Transbay District
A highly urban setting and surrounding office towers subordinate this site. There is potential synergy with block to west to be used for cultural or park functions, which offers enhanced public identity. The dense urban character and the high volumes of vehicular traffic requires an "oasis" feel to attract and welcome audiences in. However, it is difficult to envision that this form of "protected" quality can emerge. Strong, massive and/or "busy" office tower designs compete for attention.

Summary: Urban and high activity suggests conflict; oasis effect not clearly attainable.

Mid-Embarcadero
The orientation of this longitudinal site to the waterfront, Market Street and the Ferry Building provides a form of entry, and offers a substantial opportunity for welcome and identity. Although the character of the surrounding office and residential areas may not yet be as familiar to a broad audience, this should be overcome by physical prominence and direct access.

Summary: High visibility from and outlet to waterfront offsets current image imparted by abutting office and residential development; upscale setting balanced by pedestrian, transit and ferry proximity.

Broadway/Embarcadero
Character of site is one of an "edge" between disparate functional areas. The abutting development, however, is of a highly compatible scale which precludes adverse effects. The ability to project an identity is lessened by a quality of remoteness from activity. There could be great latitude in design, although it will be constrained by adjacent private ownerships and long-term leases.

Summary: Site is largely neutral, although opportunity for a more massive building than surroundings offers identity.

Criterion 4.4: Avoid or Lessen Conflicts with Activities or Physical Conditions in Surrounding Areas

Golden Gate Park
There is no physical conflict between the museum and its setting. However, there is a very serious conflict in terms of function between a growing museum and a growing demand for park and recreational escape. This has been manifested most seriously in the controversy relating to the need for parking for visitors, and the limitation of access arising from weekend closures of Kennedy Drive.

Summary: The highly compatible physical setting relating to the park generates in turn a highly incompatible functional setting. The physical setting is unlikely to improve or worsen, but the functional conflicts will doubtless worsen.

Transbay District
The key characteristic of the Transbay area is conveyed by its name, derived from Transbay Terminal, a transportation facility. Although new lands have been made available from the elimination of access ramps to the Bay Bridge, the traffic which they transferred readily to the North of Market area has turned into ground-level traffic, with associated noise and other effects. This can impinge on the new museum. The most serious conflict relating to transportation is with the avowed intent on the part of the Joint Powers Board to locate a new train station, traversing potential sites in the area. At the same time, the new city policy is that of converting the area into a cultural complex, originally centered on the Civic Center. Were this to be implemented fully in the future, there would be a real synergy from adjacent artistic and cultural uses, as well as scientific centers (the Academy of Sciences, for instance). The speed with which this can be implemented is highly conjectural. In the interim, the area will continue to be dominated by a highly urban, and occasionally tawdry, streetscape and activities.

Summary: Conflicts between the basic transportation function of the Transbay area and the proposed cultural center activities will remain for some time to come. At the same time, the largely featureless, and occasionally tawdry, urban setting will continue to affect the compatibility, appearance, environment, and functioning of the area.

Mid-Embarcadero:
The site is centered between a major office-retail and a major residential complex. a museum would likely benefit from this proximity. It is clear that there will be competition for limited parking spaces, but the existence of alternative modes of movement should help to change the means by which museum visitors arrive. Although the two blocks now act as a form of buffer with the Embarcadero Center from the residential areas, it is likely that the museum could function in the same way to a lesser extent.

Summary: Conflicts might arise with the three adjacent uses, although the area has such pervasive charm that it is likely to be able to accommodate a museum use.

Broadway/Embarcadero
There are few potential incompatibilities with adjacent uses, other than with the Gateway Commons residents. The scale of buildings is largely the same and would remain so. The blockage of views would not likely be a serious concern. Light and air are abundant. There are likely to be no serious negative impacts on the museum or from the museum.

Summary: Highly compatible use.

Criterion 4.5: Enhancement of Museum-going Amenity

Golden Gate Park
The museum's current setting in Golden Gate Park offers the amenities of a beautiful urban park, cultural facilities, and numerous recreational opportunities. The facade of the existing museum faces south and receives considerable direct sunlight.

Summary: Substantial daylight and distinctive park amenities.

Transbay District
This site is within close proximity to the MOMA and Yerba Buena Gardens, the financial district, Union Square, and the waterfront, offering the museum visitor numerous nearby attractions. Strong southern exposure creates a sunny site.

Summary: Close proximity to variety of San Francisco attractions.

Mid-Embarcadero
Surrounded by upscale office, retail and residential development, and the waterfront promenade, the Mid-Embarcadero site offers the museum visitor a variety of adjacent downtown amenities. Despite the adjacent tall buildings, the site does enjoy considerable sunlight and exposure to the bay.

Summary: Numerous surrounding downtown amenities.

Broadway/Embarcadero
The views from this site provide a sense of the variety of attractions nearby – downtown, the waterfront, Telegraph Hill, and North Beach. However, there is still a feeling of being somewhat removed from these attractions and activities, given the site's location on the edge of downtown. The site's open exposure on all sides and an expansive view of the water create a sunny and pleasant setting.

Summary: Variety of attractions; pleasant setting.

Criterion 4.9: Availability of Nearby Open Space with Potential for Use as Sculpture Garden with an Absence of Disturbing Noise, Wind and Glare

Golden Gate Park
The de Young Museum is currently located in one of the most beautiful urban parks in the country. The site itself is situated along the northern edge of the Music Concourse, a formally landscaped pedestrian area providing walking paths and seating areas. The site is large enough to accommodate the footprint of the museum and a sculpture garden. Noise, wind and glare are minimal at this site.

Summary: Sculpture garden can be accommodated; park setting ideal.

Transbay District
The Transbay site can also accommodate a sculpture garden, although it will be difficult to shield the garden from traffic noises, given the heavy use and traffic congestion along Fremont, First, Mission and Howard streets. Wind and glare should not be problematic, as the site will be protected by tall buildings on three sides.

Summary: Sculpture garden can be accommodated; noise may be a problem.

Mid-Embarcadero
The park-like setting envisioned for the museum at this site includes a sculpture garden. Being nestled in among the Embarcadero Center and the Golden Gateway, and somewhat

set back from the Embarcadero itself, the sculpture garden would be protected from most noise, wind and glare.

Summary: Sculpture garden included in site's park-like setting; noise, wind and glare not problematic.

Broadway/Embarcadero

Although this site is somewhat constrained, open space is planned for a sculpture garden. The site's exposure to the Embarcadero and the waterfront, coupled with the lack of adjacent taller buildings, may subject the sculpture garden to considerable noise during peak traffic hours, as well as wind.

Summary: Sculpture garden on site; considerable noise and wind at times.

Criterion 6.2: Potential as an Attraction with a Compatible and Synergistic Presence Capitalizing on Nearby Activities

Golden Gate Park

The clustering of cultural facilities and museums around the site create a synergistic presence within the park, despite the distance from urban activity and other attractions located downtown and in the central area of the city. The park's physical setting is highly compatible with the existing museum, although the functional setting is not, given the increasing demand for recreational space.

Summary: Synergistic with clustering of cultural facilities and museum; highly compatible physical setting relating to the park; highly incompatible functional setting.

Transbay District

The Transbay site has the potential to be highly compatible if the city policy to turn the area into a cultural complex is realized. Currently, however, the largely featureless, highly urban area does not present much opportunity for synergy with the museum. The MOMA, Yerba Buena Center, and numerous galleries are just blocks away from this site, but the somewhat tawdry immediate surroundings of the Transbay site hinder a clear connection and unified identify between the two areas.

Summary: Limited opportunity for a compatible and synergistic presence given the current state of the surrounding area. Implementation of city plans may increase potential for synergy in the future.

Mid-Embarcadero

The site is surrounded by a mix of office, retail and residential uses, with a variety of public events and activities taking place at neighboring Justin Herman Plaza and the nearby waterfront. Although the area currently does not possess a cultural presence, the high level of urban activity and the attractiveness of the site are conducive to creating such a presence.

Summary: Site offers potential to create a highly compatible and synergistic presence.

Broadway/Embarcadero
The scale of surrounding buildings would create a physical compatibility at this site, although the area's uses and activities create varied degrees of synergy. Many of the city's more creative businesses are located near the site, and are likely be strong patrons of the museum. The waterfront is also a popular attraction for local residents as well as tourists, and the museum should benefit from its exposure at this site. However, the site's location on the edge of the downtown may limit its ability to directly capitalize on nearby activities.

Summary: Compatible and synergistic presence; somewhat removed from downtown activities.

Criterion 7.1: Ability to Concentrate Similar Administrative and Curatorial Activities

Golden Gate Park
Currently, the curatorial offices of the de Young Museum and the Palace of the Legion of Honor are located at the respective museums. The administrative headquarters of the Fine Arts Museums are located near Union Square in Downtown. This location has been maintained since 1992, when the Palace of the Legion of Honor was closed for renovation. This arrangement of administrative and curatorial offices is not considered efficient, militating against desirable coordination. The rebuilding of the de Young Museum in the park would allow the administrative offices to be consolidated at the de Young, improving the level of coordination with both museums, which are less than two miles apart.

Summary: Coordination of administrative and curatorial and other museum activities enhanced by relative proximity.

Transbay District
With administrative headquarters for the Fine Arts Museums of San Francisco transferred to this site, operations should become more efficient by combining the control with the related activities of the larger of the two constituent museums. However, it would not improve the situation with the Palace of the Legion of Honor, which would remain a distant six miles away and would not even have the contact provided by the current de Young Museum staff and location.

Summary: Administrative headquarters consolidated with curatorial activities of the de Young; however, the Legion would become even more isolated.

Mid-Embarcadero
With administrative headquarters for the Fine Arts Museums of San Francisco transferred to this site, operations should become more efficient by combining the control with the related activities of the larger of the two constituent museums. However, it would not improve the situation with the Palace of the Legion of Honor, which would remain a distant six miles away and would not even have the contact provided by the current de Young Museum staff and location

Summary: Administrative headquarters consolidated with curatorial activities of the de Young; however, the Legion would become even more isolated.

Broadway/Embarcadero
With administrative headquarters for the Fine Arts Museums of San Francisco transferred to this site, operations should become more efficient by combining the control with the related activities of the larger of the two constituent museums. However, it would not improve the situation with the Palace of the Legion of Honor, which would remain a distant six miles away and would not even have the contact provided by the current de Young Museum staff and location. With administrative headquarters for the Fine Arts Museums of San Francisco transferred to this site, operations should become more efficient by combining the control with the related activities of the larger of the two constituent museums. However, it would not improve the situation with the Palace of the Legion of Honor, which would remain a distant six miles away and would not even have the contact provided by the current de Young Museum staff and location

Summary: Administrative headquarters consolidated with curatorial activities of one of two museums

Criterion 7.2: Ability of Site to Optimize Revenues by Attracting Visitors for Viewing Art, Patronizing the Bookstore and Cafe, and Event Rental, Within the Capabilities of Likely Visitors to Afford Admission and Purchases (By Assuring Ease of Access, Public Awareness and Visibility, and Projecting an Inviting Museum "Face")

Golden Gate Park
The Golden Gate Concourse site ranks the lowest in terms of visitorship potential mainly due to transportation issues, a factor that is compounded by the lack of a parking garage. In addition, there are very few hotels and daytime employees in the surrounding area to boost visitorship.

Summary: Transportation issues, lack of surrounding hotels and employment.

Transbay District

The Transbay Terminal site offers very good transportation access via both private automobile and public transit and is part of the Financial District, with numerous nearby office workers. In addition, this site is in an area that will be experiencing a tremendous transformation as part of the Transbay Redevelopment Project Area. However, in the interim, the area has a somewhat greater perception of crime and does not offer as many complementary uses as the area located immediately north of Market Street.

Summary: Good transportation and part of Financial District; transitional area.

Mid-Embarcadero

The Mid-Embarcadero has the greatest potential with excellent transportation, synergistic attractions and very good accessibility to tourists and office employees. Due to the number of people in the area, this area also has a low perception of crime.

Summary: High ratings for all visitorship factors.

Broadway/Embarcadero

This site, between the Financial District and the Fisherman's Wharf tourist area, is proximate to complementary attractions and has good transportation. However, it is somewhat less convenient than Mid-Embarcadero with respect to these attractions as well as accessibility to offices and hotels.

Summary: Less convenient to nearby attractions and potential visitors from offices and hotels.

Criterion 8.1: Increase Compatibility with Surrounding Areas

Golden Gate Park

Site is already physically compatible with its park surroundings, although the existing museum does face functional compatibility conflicts given the growing demand for park and recreational escape. This has been manifested most seriously in the controversy relating to the need for parking for visitors, and the limitation of access arising from Sunday and holiday closures of Kennedy Drive.

Summary: The highly compatible physical setting generates a highly incompatible functional setting.

Transbay District

The primary surrounding land uses in the Transbay area are Class B and C office space and retail, providing support and business services to the downtown financial district. While a museum at this site is not entirely incompatible in terms of land use and physical form, it lacks a strong connection to and synergy with its surroundings. Other plans presented for the area, including a new train station and a cultural complex, also put the compatibility issue in limbo.

Summary: Lack of compatibility with current land uses and physical form.

Mid-Embarcadero

The convergence of office, retail and residential land uses at this site might make a museum seem like an inappropriate use for the site. However, the dynamism of the site and the surrounding land uses and environment could make for a highly compatible museum site. Although the two blocks now act as a form of buffer with the Embarcadero Center from the residential areas, it is likely that the museum could function in the same way to a lesser extent.

Summary: Some adjacent use incompatibility but area's pervasive charm fosters accommodation.

Broadway/Embarcadero

There are few potential incompatibilities with adjacent uses, other than with the Gateway Commons residents. The scale of buildings is largely the same and would remain so. The blockage of views would not likely be a serious concern.

Summary: Highly compatible use.

Criterion 8.2: Extent of Revitalization of Surrounding Areas Consistent with City Programs

Golden Gate Park

The adjacent uses are residential and recreational. The residential areas are predominantly built out, mostly with single-family dwellings, except for some apartments on Fulton Street. There is unlikely to be any further stimulus to the area from the maintaining of the museum in the present location, notwithstanding its new appearance and functionality. Conversely, the recent Environmental Impact Report on the Golden Gate Park Plan has termed the museum as a "nonconforming" and "non-recreational" use, suggesting, if not stating outright, that the museum is not only unlikely to revitalize the recreational use of the park but rather would militate against its enhancement.

Summary: Revitalization of surrounding residential uses unlikely; purported harmful effect on park-type recreation.

Transbay District
The city has recently adopted a concept plan for the Transbay District that seeks to convert it into a mixed-use living and working area accented by a major new transportation hub. The plan, prepared jointly by the Redevelopment Agency and the Planning Department, proposes to create several new open spaces and a new "gateway" to the Downtown. The process led to a plan with a heavy emphasis on downtown office and retail, mixed-use residential and office, open space and transportation. Significantly, it also proposes a major education/cultural and entertainment area at and near the Transbay District site, perhaps providing a corridor terminus of a museum walk. A proposed museum would provide an important catalytic effect on this project, which is in need of an "anchor" project.

Summary: Museum consistent with plan would galvanize area and jump-start revitalization.

Mid-Embarcadero
The Waterfront Plan of the Port proposes a 21st century linear recreational corridor extending from China Basin and beyond to the Northern Waterfront. The keystone is the Mid-Embarcadero Ferry Plaza and environs improvements. The museum would provide an important destination along the corridor. The Embarcadero Redevelopment Project Area abuts, but at a key location is separated from, the Golden Gateway residential project area. The former site of the freeway ramps would provide an important buffering linkage between these two areas and would provide amenity for one and an attractive magnet for economic benefit for the other.

Summary: Museum would constitute key link along waterfront park and between redevelopment areas.

Broadway/Embarcadero
The museum would be consistent with the Waterfront plan but not necessarily with ad hoc pronouncements of Port staff to seek greater revenues from these seawall and other sites. The area was originally anticipated to remain as an historic area given its designation as a local historic district despite a lack of historic structures on the site. Development in the area would link the Levi Plaza and Gateway Commons areas. On the other hand, the area currently lacks identity and would be benefited from the image-building presence of an important institution. The Port currently anticipates a major use for Piers 15-17, which is more likely to occur with a facing public attraction. Also, it can be expected that the city will someday in the not too distant future embark on a program to upgrade the entire Broadway corridor from the waterfront to the tunnel; a museum would provide an important gateway for a revitalized Broadway.

Summary: This site would further public functional goals but not necessarily meet Port financial goals.

Criterion 8.3: Consistency with City Master Plan, Other Comprehensive Plans, Redevelopment Plans, and Subarea Plans

Golden Gate Park

A new building on the site would require Planning Commission approval; however, it appears that possible interpretations of the Master Plan, including its land use and cultural elements, might suggest some ambiguity that could affect future approvals needed for rebuilding. Once the Golden Gate Park Plan is adopted, its environmental impact report certified, and it is incorporated as part of the city's Master Plan, the reference to the museum as "nonconforming" and "non-recreational" is likely to suggest that it is no longer consistent with the Master Plan. The Recreation and Park Department's sponsored Golden Gate Park Plan is clearly oriented to expanded active and passive recreational (distinguished from cultural) activity.

Summary: New Golden Gate Park Plan and EIR questions museum's compatibility and standing under the City Master Plan.

Transbay District

The City Master Plan and the Downtown Plan anticipate that substantial amounts of office development will be channeled to the South of Market area to relieve the pressures on the North of Market historic financial district. However, the new Transbay District Concept Plan essentially draws that office extent at Mission Street and the eastern end of Howard Street. The southern portion will be proposed for residential-mixed use activity, while the intermediate area will include cultural and entertainment uses. Hence, a museum would be consistent with all of these plans. On the other hand, the proposal by the Peninsula Corridor Joint Powers Board is for an extension of CalTrain into the museum study area. This proposal has been subject to a completed EIR. The Joint Powers Board will be making a decision sometime this summer. If the Board approves the station project, the museum space program would be inconsistent with the train station as presently conceived although its basement might be reconfigured at great expense.

Summary: City , Downtown and Transbay District Plans accommodate museum activity. CalTrain Extension is not consistent due to space, timing and implementation constraints.

Mid-Embarcadero

The use of the area for a museum would be consistent with the Master Plan and with the basic underlying P zoning, denoting public ownership and use. The area is essentially unzoned, and would require action by the city. The Proposition K limitation will affect the western end of the site. Of course, the museum would be subject to the Master Plan referral procedure, which involves recommendation from the Commission to the Board of Supervisors and would require a Master Plan amendment and zone redesignation. The Mid Embarcadero Open Space Project proposed a variety of optional uses for the two pertinent blocks of which the museum was one of the more prominent. However, this was when the Redevelopment Agency anticipated it would be using Block 203 for hotel use. Upon the withdrawal of that proposal, the Board of Supervisors enacted a resolution which states that ". . .improvements to Assessor's Blocks 202 and 203 shall be limited to landscape improvements until such time as additional public uses that may be proposed in the future are further analyzed by the Planning Commission and the Board of Supervisors." This, essentially, creates a "holding zone" pending consideration of other public non-open space uses. The museum's proposals for open space elements, including a sculpture garden, could provide many of the open space amenities desired for the area.

Summary: Public uses for site require Planning Commission and Supervisors approvals.

Broadway/Embarcadero
This site is outside the redevelopment areas, just as are Blocks 202 and 203. However, it has not been the subject of any sub-city plan. The Master Plan indicates that it is zoned C-3 with an 84-foot height limit. It is located in the Northeast Waterfront Local Historic District. This district has no particular regulatory significance, although it would mean that any proposed project would be subject to approval by the Landmarks Board, with appeal to the Planning Commission and Board. The Waterfront Plan suggests that this is an opportunity area, meaning that the Port is interested in early use.

Summary: Site use will be reviewed by Port Commission for consistency with Waterfront Plan.

Criterion 9.1: Avoidance of Legal or Processing Problems, Costs and Delay

Golden Gate Park
Under its interpretation of the city charter, the Recreation and Park Commission contends that the new museum cannot go outside the boundaries of the present structure without a two-thirds vote of the Board of Supervisors, as well as a majority vote of the electorate. The museum will require approval of the building design by the Art Commission, as well as by the Planning Commission with regard to Master Plan conformity. There is concern that the Master Plan's limits on "non-recreational uses" in the Park could require the museum to provide its museum services elsewhere.

Summary: Rec-Park Commission can exercise jurisdiction over any rebuilding. The Art and Planning Commissions must approve as well, but Master Plan interpretations may make approval difficult.

Transbay District

The Peninsula Corridor Joint Powers Board is an entity created by the governing bodies of the three counties represented: San Francisco, San Mateo and Santa Clara. Under the Joint Exercise of Powers Act, any power that all of the participants may exercise independently may be delegated officially to a new entity to exercise jointly. The current zoning for the north third of the block is 30 feet, the middle third is 80 feet, and the south third is 300 or 400 feet. At present, the land in question is owned by the State of California, and Caltrans more specifically. This will mean that the land would first have to be conveyed , presumably at nominal cost, to the city.

Summary: To use site, city may have to abrogate Joint Powers Agreement. Need Caltrans conveyance, and Planning Commission and Board approvals.

Mid-Embarcadero

Blocks 202 and 203 are owned by the City and County of San Francisco. Hence, they would be bound by the Master Plan. This now reflects the Mid Embarcadero Open Space Plan adopted by the Board. The adoption resolution leaves later public use of the subject blocks open. The northern half of Block 202 is included within the Embarcadero-Lower Market Redevelopment Project Area E-1. Since the southern half is city-owned, it would be subject to Master Plan referral procedures by the Planning Commission and the Board of Supervisors. The OS zoning would require a rezoning as well, presumably to C-3G, with height subject to urban design review and Proposition K. If the Recreation and Park Commission were interested in shifting its jurisdiction to the eastern half of Block 202, they could do so with Board approval. The current EIR is anticipated to cover the museum, since it was already included as one alternative. If the site were proposed to be included in the Redevelopment Area, the area would not be subject to city zoning but would have to proceed through the redevelopment project area creation process. Since the land is owned by the city, it will require the City Real Estate Department to concur in its disposition.

Summary: If the land is placed within a redevelopment area, the Redevelopment Agency would have jurisdiction. Otherwise, the Planning and Art Commissions and Board of Supervisors must approve the project.

Broadway/Embarcadero

The land is partially privately owned, and is zoned to accommodate the museum. Other portions are under the jurisdiction of the Port Commission, and would require its approval. None of the land is under the jurisdiction of BCDC. Other city agencies would have to concur, as they would for the other sites.

Summary: The Port Commission would be the key agency whose approval is required.

Criterion 9.7: Likelihood of Voter Approvals (No Political Polling Undertaken)

Golden Gate Park
The fact that the museum has already failed of approval in the park with a garage, without approval would be difficult.

Summary: Two-thirds voter approval conjectural.

Transbay District
Two-thirds voter approval is unlikely if the museum project is perceived as being in opposition to the CalTrain Extension. Leaving the park may generate opposition.

Summary: Two-thirds voter approval conjectural.

Mid-Embarcadero
Were tax increments to be made available, no voter approval would be required. Such monetary transfer may be more remote absent placing the site in a redevelopment area, despite legality of use of increments were the project to benefit lands within an adjacent project area. Two thirds voter approval of bond issue conjectural. May require inclusion in redevelopment area to gain tax increments. Project expedited since the Mid-Embarcadero Open Space EIR, now partially completed, covers the project. Leaving the park may generate opposition.

Summary: Two-thirds voter approval of bond issue conjectural.

Broadway/Embarcadero
With strong support and absent any significant opposition, voter approval of a bond issue is conjectural. Leaving the park may generate opposition.

Summary: Two-thirds of bond issue voter approval conjectural.

Criterion 9.8: Potential for Future Expansion in Adjacent Area/Building

Golden Gate Park
Once rebuilt, the museum would have virtually no opportunity for expansion under the city Master Plan and the Draft Golden Gate Park Master Plan, if adopted.

Summary: No expansion possible.

Transbay District
Various options are available for expansion, particularly on the block to the west. Other opportunities also may become available.

Summary: Expansion possibilities exist in area.

Mid-Embarcadero
Options of expansion include the lands to the north along the Embarcadero, now occupied by the tennis courts and privately owned, and the lands occupied by the abandoned Chevron gas station, called Seawall Lot 351, with approximately 15,000 square feet. The Port Waterfront Design and Access Plan would allow development on this site. Additionally, lands to the south occupied by the Embarcadero Median and the Bus Turnaround may become available. Pier 1 may become available although it is slated for a comprehensive pier preservation study to develop recommendations for adaptive reuse; a policy is emerging that the south side of Pier 1 should be used to provide public access and views to the ferry areas, and which would connect to the Embarcadero Promenade. In fact, a major possibility is use of both Piers 1 and 3, and perhaps a space between to constitute a major public space or park. An urban design policy would allow views and public access through these two piers where compatible with historic preservation needs.

Summary: Many important expansion opportunities exist on Port and public lands.

Broadway/Embarcadero
The two major privately owned parcels could be acquired, as well as the smaller building fronting on Broadway (assumed to be acquirable). At least one building is the subject of a long-term ground lease with a 45-year duration. Additionally, some of the piers might be made available, although that would require BCDC approval. The Port is considering creation of a major public open space, called the "Northeast Wharf." One of these options is Piers 15 and 17, which could be used as a sculpture park. Pier 17 remains a candidates for removal; Pier 15 is considered historic.

Summary: The lands on the seawall parcel to the north could be used for parking, and other nearby parcels may become available.

APPENDIX D

Real Estate and Financial Evaluations

Prepared by Sedway Group

CRITERION 9.2: LIMITING COST AND DELAY OF ACQUISITION

GOLDEN GATE CONCOURSE

There are no acquisition costs associated with the Concourse site within Golden Gate Park as the museum already controls the site.

Rating: **Very High**
Summary: **Current site; no cost of acquisition**

TRANSBAY TERMINAL

The Transbay Terminal site consists of both public and private properties. The privately-owned properties include two Assessor's Lots used as a parking lot. A third lot is improved with a two-story manufacturing building. The order of magnitude acquisition cost estimate for these properties is based on the estimated price per square foot of land or building applied to the appropriate area, as adjusted based on the probability of various outcomes discussed below. Not included in the estimated acquisition costs are the complexities and scheduling uncertainties associated with the site.

The public land represents the existing Transbay Terminal owned by the State of California (CalTrans). It is CalTrans' policy to not make a gift of state property. Typically, CalTrans sells excess land at public auction if the governing municipality does not exercise its first right of refusal to acquire the land at market value. However, there are three situations when land is not sold at market value:

1. State legislation is passed allowing CalTrans to "gift" the land to the municipality or other agencies. This situation occurred after the Loma Prieta Earthquake, when State Senator Quentin Kopp successfully sponsored a bill giving the land under the former Embarcadero Freeway (Interstate 480) to San Francisco. (Portions of the Mid-Embarcadero site discussed earlier are part of this land.) This type of gift could have greater support in the aftermath of a natural disaster. It is speculative that state support could be generated to "give away" such a valuable property.
2. A cooperative agreement is made between CalTrans and the municipality. The land is often exchanged for some form of state benefit (e.g., infrastructure improvements).
3. A direct agreement is made between CalTrans and the municipality. The land is often exchanged for some form of state benefit.

According to the Mayor's Office, the City of San Francisco will attempt to obtain the Transbay Terminal and related land (under the connector ramps) from the State at no cost. At this time, it is uncertain whether the City will pursue the legislative option or some form of agreement. The Transbay Terminal site will probably be part of a larger request that includes funding for the construction of a replacement regional transit facility. There is also a possibility that this project may be included with the Bay Bridge retrofit project. Regardless of whether this acquisition is pursued via legislative action or an agreement, the process will involve generating statewide support for the project, of which the Transbay Terminal site is just a part.

Given the volatile nature of statewide politics and the publicized CalTrans budget constraints, it is unknown whether the City would be successful in its goal of obtaining the Transbay Terminal site at no cost. As it is impossible to forecast the City's probability of success, for purposes of analytical comparison the most reasonable option is to assume a 50 percent probability that the land can be obtained at no cost. This implies that there is a 50 percent chance that the land would be acquired at a cost similar to market value. Thus, the estimated acquisition cost for the Transbay Terminal land is a 50 percent probability applied to the estimated land value.

Complicating the Transbay Terminal site even further is the fact that the San Francisco Redevelopment Agency plans to include it in a new Transbay Project Area. This project area is expected to be in place in April 1998. A key assumption for this new Transbay Project Area is that the City will own the land currently used for the Transbay Terminal and connector ramps. It is assumed that the private property owners sharing the Transbay Terminal block would accept a "land swap" with other Project Area sites (specifically, state land assumed to be granted to the City and then controlled by the Redevelopment Agency). The Redevelopment Agency would handle the trade, allowing the museum to acquire this privately-owned land at no cost. Therefore, there is a reasonable probability that the Redevelopment Agency could arrange an acceptable land trade for the private landowners (75 percent); however, this probability is based on the ability of the City to obtain the land at no cost (50 percent). Based on this, the estimated acquisition cost for the privately owned properties is multiplied by 62.5 percent (100% - (50% X 75%)).

Based on the probability analysis presented in the two previous paragraphs, the order of magnitude acquisition cost estimate for the private and public portions is $11,080,000. This includes the estimated relocation costs for the owner-occupant of the industrial building.

Rating: **Average**
Summary: **Estimates are highly speculative and dependent on political decisions; best case cost is zero, worst case cost is $20.6 million**

MID-EMBARCADERO

The two blocks at Mid-Embarcadero, Blocks 202 and 203, are generally owned by the City of San Francisco. One lot is specifically controlled by the Department of Public Works, while another is within the jurisdiction of the Recreation and Parks Department. A few lots may be pending a formal transfer (at no cost) from the California State Department of Transportation (CalTrans), but for all intents they are under City control.

The San Francisco Board of Supervisors passed a resolution in October 1996 (No. 1022-96) limiting the improvements on Blocks 202 and 203 to landscaping "until such time as additional public uses that may be proposed in the future are further analyzed by the Planning Commission and the Board of Supervisors." Thus, a previous plan for the uses on Blocks 202 and 203 to contribute to the costs for improvements at Justin Herman Plaza has been abandoned. As these lots are either already owned by the City or pending a cost-free transfer from CalTrans, the potential acquisition costs related to this alternative are assumed to be zero.

Rating: **Very High**
Summary: **City owned or ownership in process; no cost of acquisition**

BROADWAY/EMBARCADERO

The Broadway/Embarcadero site consists of 1) two privately-owned buildings, 2) a City-owned lot (pending transfer from CalTrans), and 3) four parcels controlled by the Port of San Francisco.

- The estimated acquisition cost for the two privately-owned buildings are based on the building area multiplied by a market-based price per square foot of building area. An additional cost item is reimbursement of relocation expenses to the four businesses that occupy these buildings. Not included is the possibility of litigation to gain control of property under lease.
- The City-owned lot is assumed to have no acquisition cost.
- The four Port of San Francisco parcels cannot be sold, but rather can be ground-leased for a period of up to 66 years. The Port also cannot execute an agreement transferring occupancy of land "below market." The Port typically appraises the market value of the land and applies an annual percentage return (usually 9.0 to 10.0 percent) in order to derive the annual lease rate. Thus, the estimated acquisition cost is based on the estimated land value (land area times the price per square foot of land area), which is then converted to an annual rent by multiplying by 9.0 percent (assuming that the Port would accept a low-end return for a public use).

The total up-front estimated acquisition cost (including relocation costs for the tenants of the privately-occupied buildings) is $14,210,000. (This figure is provided for comparison with other options and assumes that the Port land could be purchased.) Based on the Port's inability to sell land, the up-front acquisition cost for their land equates to an annual ground rent of $863,000 per year. An additional up-front cost of $4,620,000 is required for the non-Port properties, including tenant relocation costs.

A fifth Port-owned lot is ground-leased to a private entity that has constructed a building and leased it to ABC Broadcasting. There are about 45 years remaining on the ground lease. If this lot were acquired, the cost would include annual ground rent to the Port and an up-front acquisition cost of the building paid to the ground-lessee, estimated as the price per building square foot multiplied by the building area less the land cost estimate. There would also be a tenant relocation cost paid to ABC estimated at $100,000.

If the ABC Broadcasting building and related Port-owned lot were included, the up-front acquisition cost would increase to an estimated $11,010,000 and the annual ground rent would increase to $1,407,000. The total cost equivalent (if all property were purchased today) for comparative purposes is $26,640,000.

Rating: **Very Low**
Summary: **Purchase and ground lease; ABC building expensive; relocation costs and site control issues**

DE YOUNG MUSEUM RELOCATION STUDY
ALTERNATIVE SITES PROPERTY ACQUISITION COSTS
MAY 1997

Property Address	Block/ Lot	Improvements	Land Sq. Ft.	Bldg. Sq. Ft.	Zoning	Ownership or Authority	Comments	Cost Per SF	Cost Estimate (1)
Broadway/Embarcadero									
Privately-owned Properties									
777 Davis St.	140/1	Office Building	18,769	25,194	C-2	KSW Properties	2-story building; renovated	$120	$3,023,280
60 Broadway	140/5	Office Building	8,076	13,194	C-2	Realtime Partners	2-story building; UMB exempt	$115	$1,517,310
Public-owned Properties									
E/S Davis, N of Broadway	140/8	Parking Lot	10,165	None	C-2	CalTrans (State)	To be deeded to City	0	0
NEC Broadway & Front	140/7	Parking Lot	37,675	None	C-2	Port of San Francisco	Seawall Lot 322-1	$80	$3,014,000
NEC Broadway & Davis	139/2	Parking Lot	32,500	None		Port of San Francisco	Seawall Lot 324, size from PSF	$80	$2,600,000
NEC Vallejo & Davis	138/2	Parking Lot	3,123	None	C-2	Port of San Francisco	Seawall Lot 323	$80	$249,840
NEC Green & Front	110/2	Parking Lot	46,600	None	M-1	Port of San Francisco	Seawall Lot 321	$80	$3,728,000
Broadway/Embarcadero Totals			**156,908**	**38,388**					**$14,132,430**
							Plus: business relocation costs (2)		**$80,000**
									$14,210,000
Add: ABC Building									
Vallejo/Davis/Green/Front	137/1	Office Building	75,489	137,000	C-2	Port of San Francisco	Seawall Lot 322; building size per	$80	$6,039,120
						GB Associates LLC	Port; ground lease - 45 years left	$90	$6,290,880
							Plus: business relocation costs		$100,000
Total Including ABC Building									**$26,640,000**
Mid-Embarcadero									
South side Block 202	202/6,14,15	Vacant	52,855	None	P	CalTrans (state) to City	Estimated size	$0	$0
North side Block 202	202/18	Vacant	58,240	None	P	SF Parks & Rec. Dept.	May not acquire parcel	$0	$0
NWC Clay & Drumm	203/14	Vacant	64,629	None	P	CalTrans (state) to City		$0	$0
SWC Washington & Drumm	203/13	Vacant	10,994	None	P	SF Dept. Public Works		$0	$0
Mid-Embarcadero Totals			**175,724**	**0**					**$0**
Transbay Terminal									
Privately-owned Properties									
172 Fremont St.	3720/5	Parking Lot	9,496	None	C-3S	KSW Properties		$125	$1,187,000
400 Howard St.	3720/6	Parking Lot	8,999	None	C-3S	KSW Properties		$125	$1,124,875
430 Howard St.	3720/7	Industrial Building	26,872	53,744 (estimate)	C-3S	Fritzi Realty	Est. building area (2 stories)	$70	$3,762,080
Subtotal Privately-owned Properties									$6,073,955
Apply Probability Factor								62.5%	**$3,796,222**
Public-owned Properties									
Mission St., btwn Fremont and First Sts.	3720/1	Transbay Terminal	96,245	N/Av.	C-3O	CalTrans (State)		$150	$14,436,750
Apply Probability Factor								50.0%	**$7,218,375**
Trasnsbay Terminal Totals			**141,612**	**53,744**					**$11,014,597**
							Plus: relocation costs for Fritzi		**$70,000**
									$11,080,000

Notes:

(1) City-owned properties are assumed to have no acquisition cost. Port and CalTrans land (except former Embarcadero Freeway land) require compensation.

(2) Cost breakdown is $30,000 each for EDAW (777 Davis) and Realtime Video (60 Broadway); and $10,000 each for two smaller tenants in 777 Davis.

Sources: Port of San Francisco; San Francisco Redevelopment Agency; SMWM; TRW-Redi; Comps Inc.; and Sedway Group.
D:\09097\PROP_SUM.WK4

09:23 AM
30-May-97

CRITERION 9.6: AVAILABILITY OF FINANCING SOURCES

This section addresses the availability of various types of public financing first generally and then in reference to each alternative site. These findings are preliminary, and need further input from City officials and bond counsel. This section assumes that the museum will receive some money towards the construction of the new facility, but that additional public financing will be essential.

The three main possible sources include general obligation bonds, tax increment financing, and revenue bonds. The Museum has already had experience with general obligation bonds, which require a two-thirds voter approval for issuance. As was evident in the recent election, this high level of voter approval is very difficult to achieve. The second method, tax increment financing, does not require voter approval. Although generally limited to use in redevelopment project areas, there are potentially exceptions if bonds are used to finance a project that will benefit an adjacent or nearby redevelopment project area. A third possible source is that of revenue bonds on property owned by the Port of San Francisco. This would apply to only one property, Broadway/Embarcadero, and is considered unlikely due to the existing high indebtedness level of the Port.

Other than the potential for redevelopment financing on the Mid-Embarcadero site, the main potential financing source is a popular form of lease revenue financing known as Certificates of Participation (COPs). These provide long-term funding based on a pledge of annual revenues from lease payments or other sources of revenues such as the City's hotel tax or general fund. This source has tax-exempt status usually both from federal and California taxes and, sometimes with the help of insurance, achieves financing at an interest rate of under 6 percent. COPs can be used to finance up to 100 percent of the cost of the building, with considerable flexibility as to amount and timing.

A major advantage of COPs in California is that they are generally not subject to voter referendum, with the exception of two jurisdictions, one of which is San Francisco. Although there have been notable exceptions where COPs have been issued absent a referendum, it can be assumed that the de Young Museum would need a simple majority vote in order to proceed.

The major challenge to the use of Certificates of Participation for the new museum is that of demonstrating a revenue source from the museum operations. A sufficient surplus of revenues over expenses to cover such financing is likely inappropriate given the role of the museum. Thus, in order to pursue COPs, the museum certainly needs the political backing of the City to provide a source of revenues to pay the debt service on the COPs.

GOLDEN GATE CONCOURSE

Barring passage of a general obligation bond by two-thirds of the City's voters, the only known exception is the above-described COPs.

Rating: **Average**
Summary: **Limited potential financial support, except possibly COPs**

TRANSBAY TERMINAL

Although the Transbay Area is expected to be a San Francisco Redevelopment Project Area by mid-1998, tax-increment will be limited. Due to timing conflict between the expected construction of the new Museum and the generation of sufficient funds for tax increment financing, beyond those already committed for public improvements, the probability of financial support from this source is limited for this site. COPs also have potential here, particularly in conjunction with other sources of funds that could be available due to the transit uses and issues of blight impacting the area.

Rating: **Average**
Summary: **Potential for COPs**

MID-EMBARCADERO

The northern half of Block 202 is in the Golden Gateway Redevelopment Project Area. Currently, there are no plans for the Redevelopment Agency to incorporate the remainder of this site into the project area. However, since the site is adjacent to this project area, which has a nearby commercial component that would benefit from the Museum, there may be potential for the use of tax increment financing. Specific benefits to this project area from the Museum include greater retail sales for Embarcadero Center and a way to address the security problem that currently exists at Block 202 and 203. Thus, there is some potential for tax increment bond financing. However, there are other facilities competing for the funds available through the San Francisco Redevelopment Agency's bonding capacity, especially given the recent merger of the Golden Gateway and South of Market project areas. COPs are also a potential source of financing on this site, especially if there is political support.

Rating: **High**
Summary: **Potential for tax increment financing or COPs**

BROADWAY/EMBARCADERO

The site is not expected to be placed into a redevelopment agency project area. Although the site is adjacent to the northern boundary of the Golden Gateway Redevelopment Project Area, this portion of the project area is mostly residential and would not receive any financial benefit from the adjacent Museum. As a result, there is limited or no potential for tax increment bond financing through the San Francisco Redevelopment Agency. However, the Port of San Francisco indicated that it does have the ability to issue revenue bonds. There are a few financing options available through the Port that do not require voter passage, or if they do, the requirement is a 50 percent voter approval, not 66 percent. Despite these potential financing vehicles, the Port has a significant debt load and thus its ability to issue future bonds may be limited. COPs are also a potential financing source for this site, with the caveat that the maximum available will address a lower proportion of the projected land and construction costs (due to the ground lease with the Port).

Rating: **Average**
Summary: **Limited potential for revenue bonds through the Port, or COPs**

APPENDIX E

Construction and Building Cost Evaluations

Prepared by Swinerton & Walberg

DE YOUNG MUSEUM RESTUDY

Criterion 1.2 - Level of Cost to Abate Hazardous Materials

• Golden Gate Park Site:	$100,000 below grade and $4,000,000 in existing structures.
• Mid Embarcadero Site:	$4,000,000 below grade
• Broadway Site:	$4,600,000 below grade and $100,000 in existing structures.
• Transbay with Train Station:	$3,000,000 below grade and $100,000 in existing structures.
• Transbay without Train Station:	$4,900,000 below grade and $100,000 in existing structures.

Data from the Soil Engineer indicates that the soil at all three downtown sites contains unacceptable levels of contaminants. Assume that 50% of the top 20' of depth of soil at the Transbay and Mid Embarcadero sites will be removed to Class 1 and Class 2 dumpsites. The soil at the Broadway site is reported to be of earlier origin allowing the quantity of removal to approved dumpsites to be reduced to 25%. The Golden Gate Park site may have minimal contamination around the existing fuel tank.

Asbestos and lead paint within buildings that are scheduled for demolition has not been quantified, with the exception of the Golden Gate Park site which was previously surveyed by the Department of Public Health. Allowances are included in the site cost comparison model for the assumed cost of mitigation.

h:\worddata\admin\svd\deyoung2

DE YOUNG MUSEUM RESTUDY

Criterion 1.3 - Ability of Site/Building to Accommodate State-of-the-art HVAC System.

The Golden Gate Park site will have cleaner air for recirculation since it is outside of the downtown zone of air pollution. However, current technology can provide the desired level of filtration, humidity control, heating, and air conditioning at any of the sites.

h:\worddata\admin\svd\deyoung2

Criterion 1.4 - Ability of Site/Building to Comply with Electrical, Fire, and Life Safety Codes.

All four sites are served by adequate utilities to provide fully operational electrical, fire protection, and life safety systems.

h:\worddata\admin\svd\deyoung2

DE YOUNG MUSEUM RESTUDY

Criterion 9.3 - Limiting Cost and Delay of Demolition and Construction (See tabulation of below grade construction cost)

- Golden Gate Park Site: Up to one year for museum relocation, asbestos abatement, and building demolition.
- Mid Embarcadero Site: Up to six months due to cross lot bracing and removal of contaminated soil.
- Broadway Site: Up to eight months for asbestos abatement, building demolition, cross lot bracing and removal of contaminated soil removal.
- Transbay with Train Station: After train station is built, up to six months for asbestos abatement, demolition and removal of contaminated soil.
- Transbay without Train Station: Up to eight months for asbestos abatement, demolition, and removal of contaminated soil.

h:\worddata\admin\svd\deyoung2

DE YOUNG MUSEUM RESTUDY

Criterion 9.9 - Level of Ease of Construction

• Golden Gate Park Site:	Good site to build on with well drained soil, direct truck access, open cut excavation, and low water table.
• Mid Embarcadero Site:	Difficult site to build on due to contaminated soil, a thick layer of bay mud, downtown restrictions on deliveries and noise, shoring with crosslot bracing and a high water table.
• Broadway Site:	Difficult site to build on due to contaminated soil, thick layer of bay mud, downtown restrictions on deliveries and noise, shoring with crosslot bracing and high water table.
• Transbay Site with or without Train Station:	Fair site to build on with contaminated soil, thin layer of bay mud and downtown restrictions on deliveries and noise. Use conventional shoring and dewatering systems.

h:\worddata\admin\svd\deyoung2

BELOW GRADE CONSTRUCTION COST IMPACT FOR SITES

	Golden Gate Park Site		**Mid Embarcadero Site**		**Broadway at Waterfront**	
	Museum Footprint 136,000 sf		Museum Footprint 124,000 sf		Museum Footprint 132,000 sf	
	Basement Footprint 136,000 sf		Basement Footprint 124,000 sf		Basement Footprint 132,000 sf	
Clearing & demolition	$1,400,000		$100,000		$500,000	
Dewatering the site	N/A		400,000		400,000	
Remove underground obstructions	100,000	(piers & oil tanks)	300,000	(freeway)	400,000	(freeway)
Remove contaminated soil	100,000	(localized area)	4,000,000	(50% of top 20')	2,200,000	(25% of top 20')
Remove asbestos and lead paint in structures	4,000,000		N/A		100,000	
Excavation & shoring for 20' basement	1,500,000	(no shoring required)	4,200,000		4,600,000	
Foundation system & utilities	1,100,000		4,700,000		4,900,000	
Basement shell (20' Floor to Floor)	7,600,000		9,000,000		9,500,000	
Auxiliary construction for building	300,000	Relocate Utilities	500,000	Relocate Utilities	200,000	Relocate Utilities
TOTAL	**$16,100,000**		**$23,200,000**		**$22,800,000**	
Alternative at Mid Embarcadero:			($4,500,000)	Deduct		
Port of San Francisco constructs parking at lowest level on half of footprint. Reduce cleanup and foundation cost of Museum by $4.5 million.			**$18,700,000**			
Auxiliary construction for parking			N/A		N/A	
Area of garage			124,000	sf	132,000	sf
Number of parking spaces at 355 s.f./space			350	spaces	370	spaces
Cost per space			$19,400	per space	$19,700	per space
Parking in second level basement	**Not an option**		**$6,800,000**		**$7,300,000**	
Alternative at Mid Embarcadero						
Reduce Garage by $3,000,000			($3,000,000)	Deduct		
			$3,800,000			

h:\worddata\admin\svd\deyoung

BELOW GRADE CONSTRUCTION COST IMPACT FOR SITES

	Transbay Site **With Train Station** Museum Footprint 118,000 s.f. Basement Footprint 93,500 s.f.		**Transbay Site** **Without Train Station** Museum Footprint 118,000 s.f. Basement Footprint 151,000 s.f.	
Clearing & demolition	$400,000		*$400,000	
Dewatering the site	200,000		300,000	
Remove underground obstructions	100,000	(Unknown extent)	100,000	(Unknown extent)
Remove contaminated soil	3,000,000	(50% of top 20')	4,900,000	(50% of top 20')
Remove asbestos in structure	100,000		100,000	
Excavation & shoring for 20' basement	3,200,000		4,600,000	
Foundation system & utilities	1,400,000		1,800,000	
Basement shell with 20' F to F	6,900,000		8,400,000	
Auxiliary construction for building	500,000	(Relocate Utilities)	500,000	(Relocate Utilities)
TOTAL	**$15,800,000**		**$21,100,000**	
Auxiliary construction for parking	N/A		N/A	
Area of garage	93,500	s.f.	151,000	s.f.
Number of parking spaces at 355 s.f./space	265	spaces	425	spaces
Cost per space	$27,900	per space	$23,100	per space
Parking in second level basement	**$7,400,000**		**$9,800,000**	

***Note: Transbay Terminal removed by others**

h:\worddata\admin\svd\deyoung

APPENDIX F

Transportation and Circulation Evaluations

Prepared by Wilbur Smith Associates

TECHNICAL MEMORANDUM
EVALUATION OF ALTERNATIVE SITES
deYOUNG MUSEUM SITE LOCATION RESTUDY
(WSA PORTION-Rev. 5/21)

Criterion 1.5: Ability of Emergency Services, Especially Fire, to Respond to Emergency Situations

Measure: *Distance from nearest fire station*

Distances to existing fire stations from each potential site were measured on a street map of San Francisco. All sites have reasonably good to excellent location with respect to the nearest fire station. In particular, the downtown sites are all within 3,000 feet (0.56 miles) of Station 13 (530 Sansome), with the closest, Mid-Embarcadero, only 1,700 feet away (one-third mile). The existing deYoung Museum site is located 3,600 feet (approximately two-thirds mile) from Station 31. Given the less congested conditions of the Richmond district, access to the Golden Gate Park site must be considered at least as good as the three downtown sites, and probably slightly better due the lesser likelihood of encountering severe traffic delays due to gridlock.

Exhibits 1.5a and 1.5 b illustrate the locations of the sites relative to the nearest fire stations.

Criterion 1.7 Ability of Site/Building to Assure Adequate and Efficient Internal Traffic and Loading Area

Measure: *Configuration of streets and alleys in the Area*

All three downtown sites span more than one block and are accessible by at least four city streets. The Transbay Terminal Site, in addition, has two alleyways (Minna and Natoma) passing by the westerly portion of the site. The Broadway/Embarcadero site plan envisages terminating Vallejo St. in a cul-de-sac east of Front Street, giving it a semi-exclusive service road (which would double as an access point to the ABC studios parking garage). The Mid-Embarcadero site proposes extending Davis Street north from Clay to Washington Street, to provide service access to the Museum. The Golden Gate Park site would be accessible via Kennedy Drive and Tea Garden Drive; service is envisaged to be via a service road off Kennedy Drive. However, Kennedy Drive currently closed to traffic on Sundays and in the future may be on Saturdays as well.

Measure: *Relationship to major thoroughfares*

The San Francisco Master Plan Transportation Element provides a classification of city streets in terms of their desired function. Other than freeways, the most important classification is "Major Arterial". Exhibit 1.7 illustrates the City's classification. As

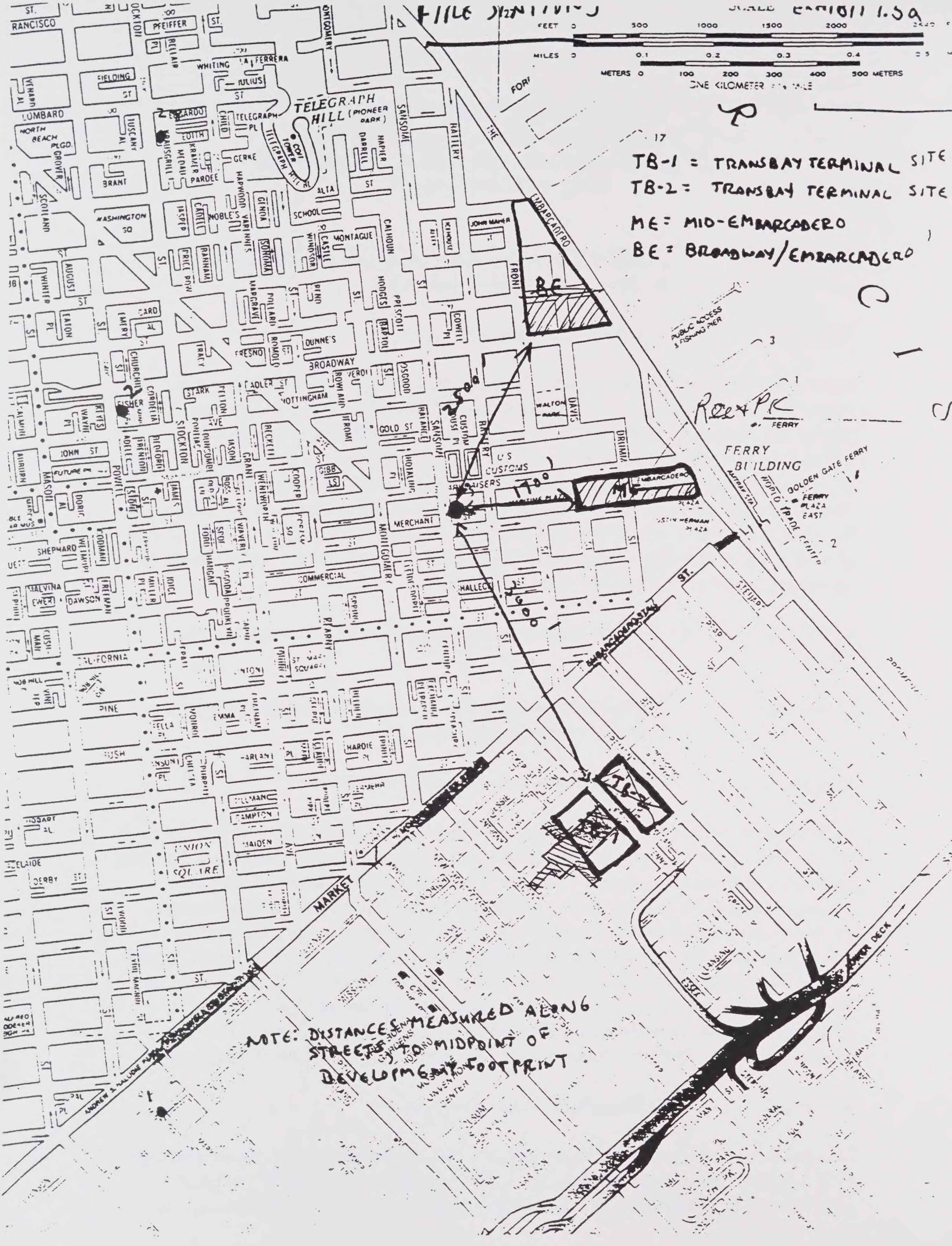
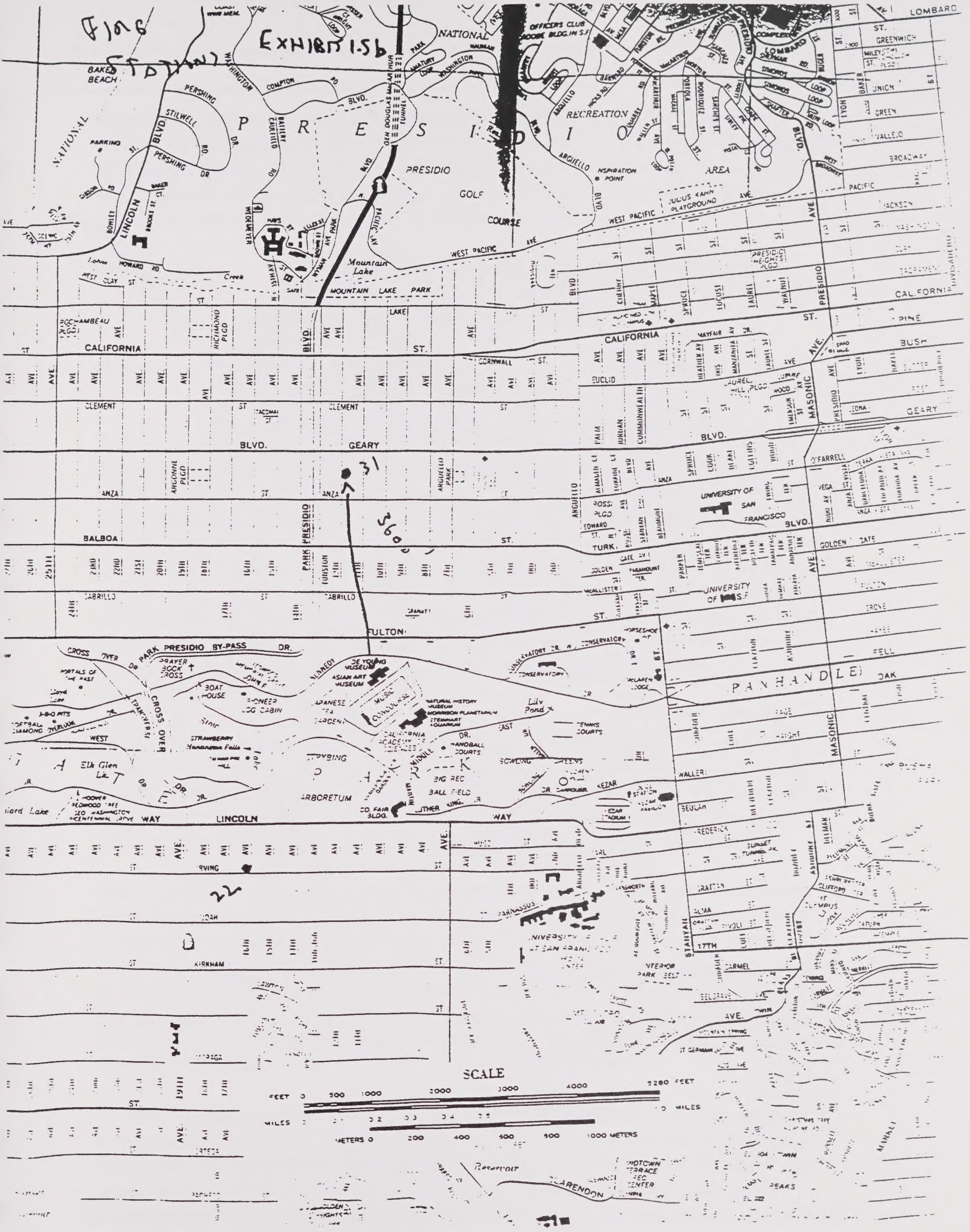
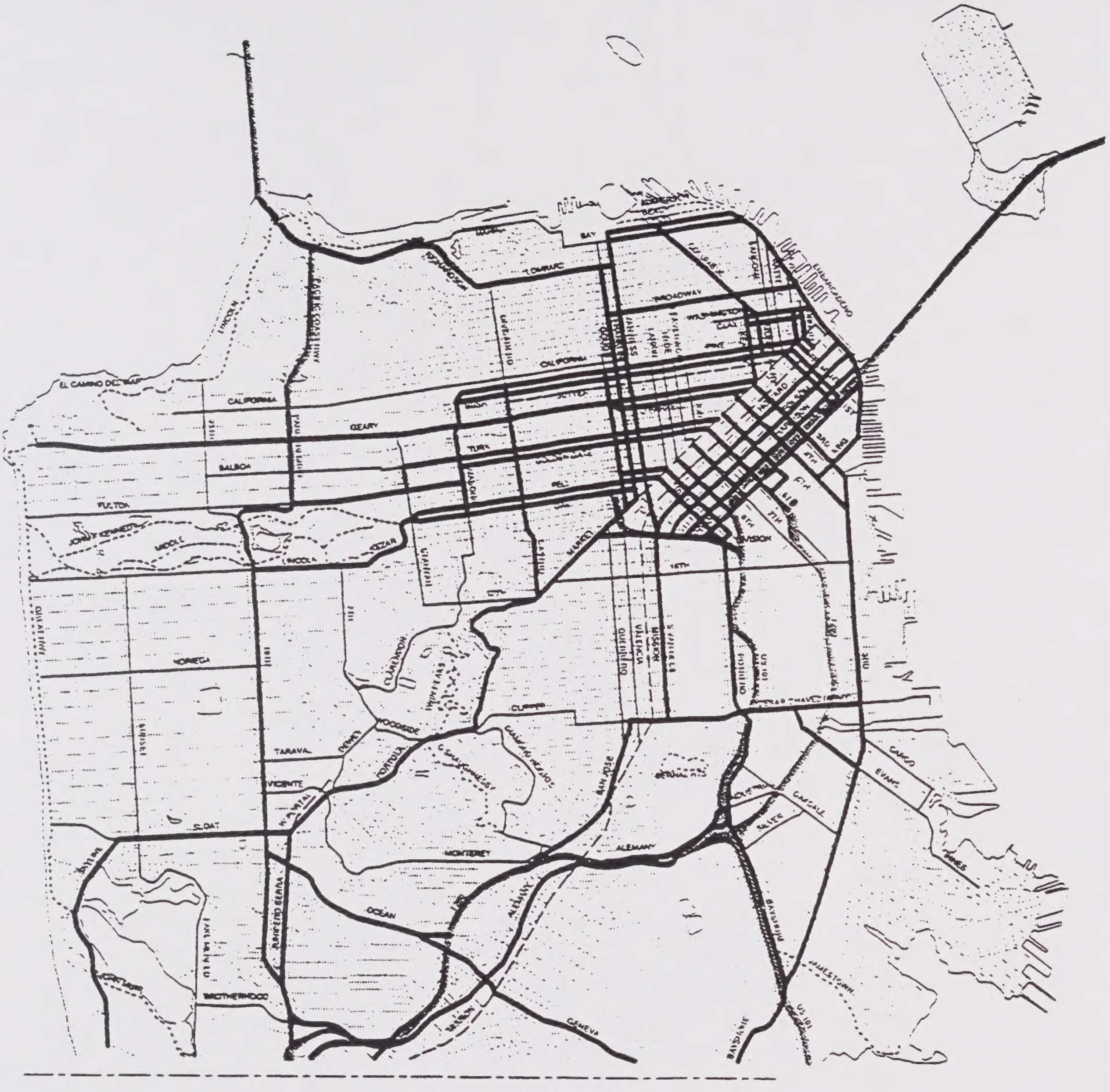
EXHIBIT 1.5a
SCALE
FEET 0 500 1000 1500 2000
MILES 0 0.1 0.2 0.3 0.4
METERS 0 100 200 300 400 500 METERS
ONE KILOMETER
TB-1 = TRANSBAY TERMINAL SITE
TB-2 = TRANSBAY TERMINAL SITE
ME = MID-EMBARCADERO
BE = BROADWAY/EMBARCADERO
BE
ME
TB-1
TB-2
2500'
1700'
2600'
TELEGRAPH HILL (PIONEER PARK)
COIT TOWER
WASHINGTON SQ
BROADWAY
FERRY BUILDING
GOLDEN GATE FERRY
FERRY PLAZA EAST
WORLD TRADE CENTER
PUBLIC ACCESS & FISHING PIER
EMBARCADERO
US CUSTOMS
MERCHANT
COMMERCIAL
CALIFORNIA
PINE
BUSH
UNION SQUARE
MARKET
STEUART
MOSCONE CONVENTION CENTER
NOTE: DISTANCES MEASURED ALONG STREETS TO MIDPOINT OF DEVELOPMENT FOOTPRINT

EXHIBIT 1.5b


Fire Station
31
360
22
LOMBARD
GREENWICH
UNION
GREEN
VALLEJO
BROADWAY
PACIFIC
JACKSON
WASHINGTON
CLAY
SACRAMENTO
CALIFORNIA
PINE
BUSH
SUTTER
POST
GEARY
O'FARRELL
TURK
GOLDEN GATE
MCALLISTER
FULTON
GROVE
HAYES
FELL
OAK
PAGE
HAIGHT
WALLER
FREDERICK
CARL
PARNASSUS
17TH
NATIONAL
BAKER BEACH
PRESIDIO
RECREATION AREA
PRESIDIO GOLF COURSE
OFFICERS CLUB
MOUNTAIN LAKE PARK
Mountain Lake
JULIUS KAHN PLAYGROUND
INSPIRATION POINT
PRESIDIO HEIGHTS PLGD.
ROCHAMBEAU PLGD.
RICHMOND PLGD.
ARGONNE PLGD.
ARGUELLO PARK
LAUREL HILL PLGD.
ROSSI PLGD.
UNIVERSITY OF SAN FRANCISCO
MASONIC
PANHANDLE
CLEMENT
BLVD.
ANZA
BALBOA
CABRILLO
PARK PRESIDIO BY-PASS DR.
CROSS OVER DR.
PRAYER BOOK CROSS
BOAT HOUSE
PIONEER LOG CABIN
JAPANESE TEA GARDEN
DE YOUNG MUSEUM
ASIAN ART MUSEUM
MUSIC CONCOURSE
NATURAL HISTORY MUSEUM
MORRISON PLANETARIUM
STEINHART AQUARIUM
CALIFORNIA ACADEMY OF SCIENCES
CONSERVATORY
Lily Pond
TENNIS COURTS
HANDBALL COURTS
BOWLING GREENS
BIG REC BALL FIELD
ARBORETUM
CO. FAIR BLDG.
KEZAR STADIUM
KEZAR PAVILION
MCLAREN LODGE
Elk Glen Lk.
Stow Lake
STRAWBERRY HILL
Huntington Falls
LINCOLN WAY
IRVING
JUDAH
KIRKHAM
LAWTON
MORAGA
ORTEGA
UNIVERSITY OF CALIFORNIA SAN FRANCISCO
INTERIOR PARK BELT
CLARENDON
Reservoir
MIDTOWN TERRACE REC CENTER
TWIN PEAKS
GOLDEN GATE HEIGHTS
SCALE
FEET 0 500 1000 2000 3000 4000 5280 FEET
MILES 0.1 0.2 0.3 0.4 0.5 1.0 MILES
METERS 0 200 400 600 800 1000 METERS


EL CAMINO DEL MAR
LINCOLN
PARK PRESIDIO
BAY
LOMBARD
BROADWAY
WASHINGTON
CLAY
PINE
CALIFORNIA
SUTTER
GEARY
TURK
FELL
BALBOA
FULTON
NORIEGA
TARAVAL
VICENTE
SLOAT
MONTEREY
OCEAN
GENEVA
ALEMANY
MARKET
MISSION
VALENCIA
GUERRERO
16TH
DIVISION
CESAR CHAVEZ
CLIPPER
PORTOLA
WOODSIDE
SAN JOSE
CARGO
EVANS
BAYSHORE
US 101
BROTHERHOOD

VEHICULAR STREET MAP

Map 6

CMP Network Streets

━━ Freeway
━━ Major Arterial
- - - Transit Conflict Street

Other Streets

── Secondary Arterial
······ Recreational Street

I.4.32

Adopted July 1995

seen, streets classified as "Major Arterial" include Broadway and The Embarcadero adjacent to the Broadway/Embarcadero site; The Embarcadero, Drumm, Davis, Clay and Washington Streets adjacent to the Mid-Embarcadero site; and Howard, 1st and Fremont Streets adjacent to the Transbay Terminal site. Fulton Street is the only street classified as "Major Arterial" in the vicinity of the Golden Gate Park site.

Criterion 2.1 **Museum to be at a Location Which Provides Optimal Accessibility for All Visitors, by Transit, Vehicle, Bicycle, or Walking at All Times of Day or Week**

Measure: *Length of time-distance travel for all potential user groups and city residential areas*

Travel time and distance is a function of location of museum visitors' trip origins, as well as their choice of mode. Exhibit 2.1a presents a projection of these factors for a downtown site. This estimate was prepared by comparing the origin and mode split characteristics of existing deYoung Museum visitors, based on surveys provided by the Museum, with the characteristics of visitors to the San Francisco Museum of Modern Art (SFMOMA), as provided by SFMOMA staff. This estimate is based on the assumption that relocation to a downtown site would reduce the private auto share to a level similar to SFMOMA's, due to the cost of parking downtown and the quality of transit service to the area. Bicycle and Group Tour Bus modes are also expected to drop for a downtown site, and public transit is projected to capture the share of patronage abandoning auto, bicycle and tour bus modes.

As seen in Exhibit 2.1a, 41 percent of museum visitors are projected to come from outside the Bay Area. It was assumed that this category consisted mostly of tourists, who would be lodging in downtown or Fisherman's Wharf facilities, and would favor public transit and walk modes. For this group, the location and level of transit service (discussed below) tend to favor the downtown sites over the Golden Gate Park Site.

The 30 percent of visitors who come from Bay Area locations outside of San Francisco are projected to continue to be the heaviest private auto mode users. Based on surveys conducted at the Museum, approximately 44 percent of these visitors are from the South Bay, 35 percent from the East Bay and 21 percent from the North Bay. From a highway accessibility standpoint, the downtown locations would be more attractive to both South Bay and East Bay visitors, and the same can be said for transit accessibility. For North Bay visitors, The Golden Gate Park site would be more accessible to auto users, but not to public transit users.

For San Francisco residents visiting the museum, transit accessibility by and large would be enhanced by a Transbay Terminal site and to a lesser degree by a Mid-Embarcadero site, due to the radial nature of Muni service. Access to a Broadway/Embarcadero site would likely not be as favorable as those locations, since many transit users would require a long walk or need to transfer once downtown (with the exception of some Muni

Exhibit 2.1a

MODE SPLIT OF VISITORS BY RESIDENCE LOCATION - EXISTING DeYOUNG Vs. DOWNTOW
(Non-"Blockbuster" Exhibits)
DeYoung Museum Site Location Restudy

Existing DeYoung (December 1996)

		Location of Visitor Residence		
	Total Visitors	San Francisco (29% of Visitors)	Other Bay Area (30% of Visitors)	Outside Bay Area (41% of Visitors)
Private Auto	58%	53%	75%	50%
Cab	3%	1%	1%	5%
Muni or Bart	20%	20%	11%	26%
Group/Tour Bus	4%	0%	11%	2%
Walked	12%	19%	2%	15%
Motorcycle	1%	2%	0%	2%
Bicycle	2%	6%	1%	0%
	100%	100%	100%	100%

Downtown Site

		Location of Visitor Residence		
	Total Visitors	San Francisco (29% of Visitors)	Other Bay Area (30% of Visitors)	Outside Bay Area (41% of Visitors)
Private Auto	48%	47%	67%	36%
Cab	3%	1%	1%	5%
Muni Metro or BART	10%	8%	12%	10%
Bus*	16%	17%	7%	23%
Group/Tour Bus	3%	0%	7%	2%
Ferry*	1%	0%	4%	0%
Walked	17%	23%	2%	23%
Motorcycle	1%	2%	0%	2%
Bicycle	1%	3%	0%	0%
	100%	100%	100%	100%

*Assumes Mid-Embarcadero or Broadway/Embarcadero site; for Transbay Terminal site, potential ferry customers would use bus under the Transbay Terminal alternative.

and Golden Gate Transit users.

Measure: *Location at a site which provides an appropriate balance of transportation modes*

Exhibit 2.1b summarizes the range of transit services available, based on published schedules and maps of all public transit providers in and to San Francisco. All three downtown sites have reasonable proximity to BART, Muni, ferry and regional bus service, The Transbay Terminal site is clearly superior in its proximity to bus lines, with all East Bay (AC Transit), South Bay (SamTrans) and most North Bay (Golden Gate Transit) lines at its door-step. Mid-Embarcadero has the best access to ferry services, BART and Muni Metro, but is less well served by regional bus services. The Broadway/Embarcadero site is distinctly inferior to the other downtown sites, being a quarter mile or more from all regional transit services, but is still vastly superior to a Golden Gate Park site, which has no regional transit access, and only two Muni lines within one quarter mile.

The Muni "F" line, which will connect downtown (from the foot of Market St.) to Fisherman's Wharf by using historic streetcars running along the Embarcadero, has the potential of becoming a major tourist line and as such could become a popular mode of access to both the Mid-Embarcadero and Broadway/Embarcadero sites.

Measure: *Proximity to transit systems with sufficient capacity to serve projected visitorship, especially BART*

High-capacity transit systems relevant to the comparison of sites include BART, Caltrain and Muni Metro. As shown in Exhibit 2.1b, two of the downtown sites are within one quarter mile of BART service, with one, Mid-Embarcadero, within one-eighth mile. The Broadway/Embarcadero site, at 0.72 miles from BART, is not within walking distance by most transit service standards. The Transbay Terminal site is immediately adjacent to a potential Caltrain downtown station, should that system be extended, and the Mid-Embarcadero site would be within approximately one-third mile from Caltrain. The Golden Gate Park site cannot be said to be served by BART. Regarding Muni Metro, for the downtown sites, Muni Metro stations are at the same location as BART stations; the Golden Gate Park site is approximately one-half mile from a Muni Metro (N line) stop.

Measure: *Distance from stations or stops of transit system*

Muni bus lines described in Exhibit 2.1b as "Immediately Adjacent" traverse streets bounding the respective site, and it is assumed that buses either stop alongside the site or that Muni would establish a stop at the site if warranted. In this respect, the Transbay Terminal site is superior to the other two downtown sites, since 11 lines are "immediately adjacent" and, for the Transbay Terminal site Option 2, at least, all regional lines which currently stop at the Transbay Terminal will also have immediately adjacent stops.

Exhibit 2.1b
TRANSIT SERVICE CHARACTERISTICS OF ALTERNATE SITES
DeYoung Museum Site Location Restudy

Type of Transit Service	POTENTIAL SITE Golden Gate Park	Mid-Embarcatero	Broadway/Embarcadero	Transbay Terminal
REGIONAL SERVICE				
Distance to Nearest BART Station	3.5 mi.	0.13 mi.	0.72 mi.	0.21 mi.
Distance to East Bay Bus Terminal	4.8 mi.	0.34 mi.	0.81 mi.	0.10 mi.
Distance to North Bay Ferry Terminal	5.0 mi.	0.13 mi.	0.38 mi.	0.55 mi.
Distance to East Bay Ferry Terminal	5.0 mi.	0.15 mi.	0.25 mi.	0.68 mi.
GG Transit Lines Within 1/4 mi.	0	4	0	30
SamTrans Lines Within 1/4 mi.	0	0	0	13
MUNI SERVICE				
Distance to Muni Metro Station/Stop	0.55 mi.	0.13 mi.	0.72	0.21 mi.
No. of Immediately Adjacent Bus Line	1	3	2	11
Additional Bus Lines Within 1/4 mi.	2	23	4	20

Measure: *Proximity to parking garages with existing remaining vehicular capacity at times of peak museum attendance*

Exhibit 2.1c lists the number of parking spaces within a quarter-mile walking distance from each site which are potentially available for parking by museum visitors. Except for the Golden Gate site, only off-street spaces are included because virtually all on-street spaces in the vicinity of downtown sites are short-term (one hour or less) and would not be used by most museum visitors. The data for Golden Gate Park and mid-Embarcadero sites were extracted from the 1995 New DeYoung Museum Site Selection Study; for the other sites, data were compiled from several recent and ongoing studies for the waterfront, Rincon Hill and Transbay Terminal areas, supplemented by weekday and Saturday parking accumulation observations by Wilbur Smith Associates for this study.

As seen in Exhibit 2.1c, the mid-Embarcadero and Transbay Terminal sites are relatively similar in weekday parking space availability, with the Broadway/Embarcadero site providing fewer opportunities for parking than even the existing museum site, largely due to the relative lack of supply in the area. On Saturdays, the number of spaces available for parking increases drastically in the Mid-Embarcadero and Transbay Terminal areas, to approximately 2,400 and 5,000 spaces respectively. It should be noted that many of these spaces (particularly south of Market Street) are in facilities which are actually closed on weekends but are assumed to be available should museum demand warrant. For the Broadway/Embarcadero site, the estimated number of spaces available rises to over 800 on weekends, considerably more than at the Golden Gate Park site, but less than the two other downtown sites.

Measure: *Distance from, or adjacency to, major vehicular, bicycle and pedestrian thoroughfares*

The sites' proximity to major vehicular thoroughfares is discussed above under Criterion 1.7. Proximity to pedestrian and bicycle thoroughfares was also determined with reference to the City's Master Plan Transportation Element. Exhibits 2.1d and 2.1e reproduce the designated Neighborhood Pedestrian Streets and Bicycle Routes, respectively.

Pedestrians

The Embarcadero, which runs adjacent to the two north of Market sites, is designated as a "Neighborhood Pedestrian Street", as are Mission, First and Fremont Streets, all of which run adjacent to the Transbay Terminal site. It should be pointed out that, City designations notwithstanding, all downtown sites have adequate sidewalk space and protection of pedestrians from traffic via traffic signals or stop signs. Currently, the pedestrian access to the Mid-Embarcadero and Broadway/Embarcadero sites are a more pleasant experience than to the Transbay Terminal site, but future development in the area may change such a perception. The Golden Gate Park site, though not served by a designated pedestrian street, has pedestrian access which is safe and a pleasant experience

Exhibit 2.1c

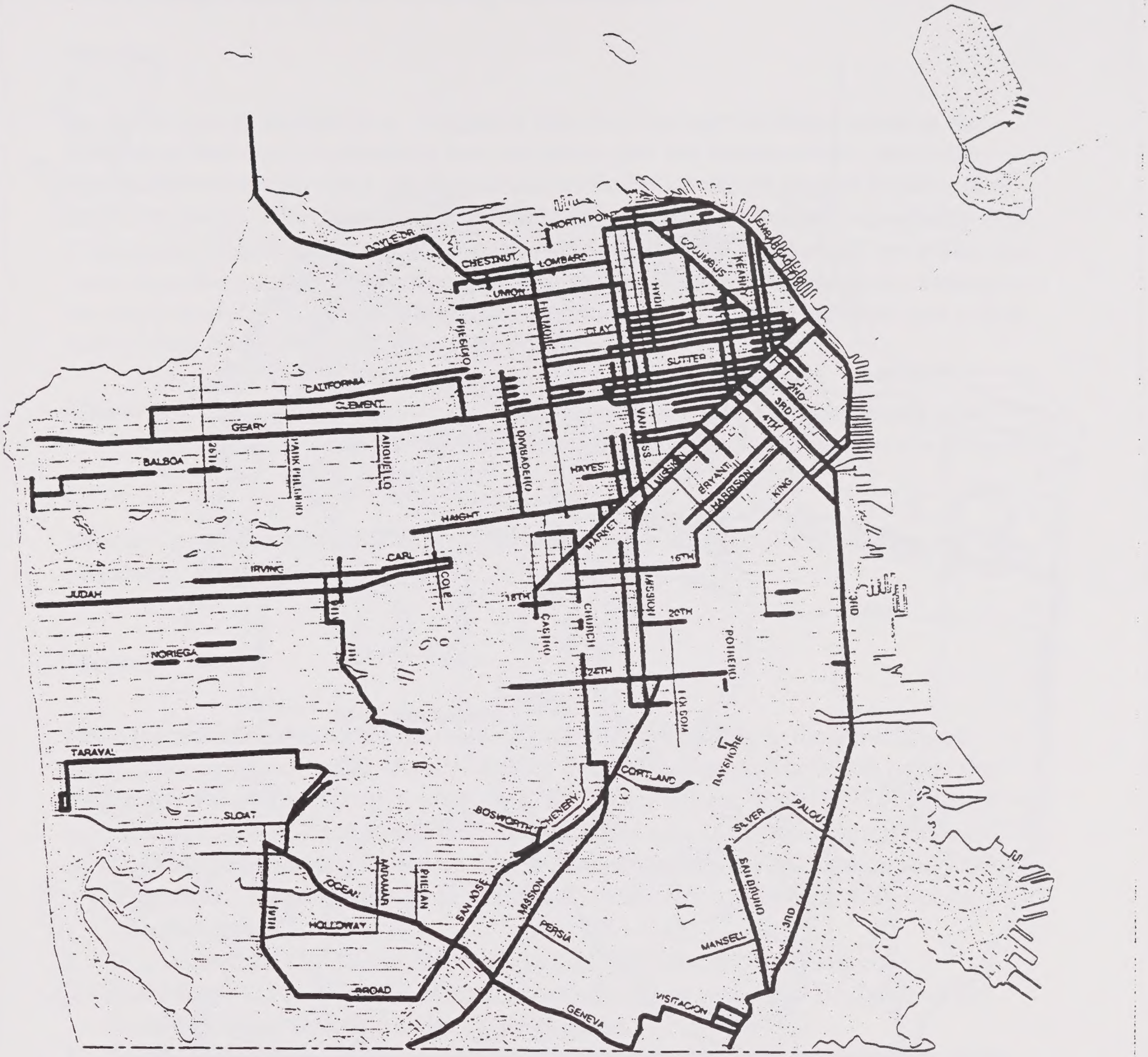
POTENITIAL OFF STREET PARKING AVAILABILITY WITHIN ONE-QUARTER- MILE OF SITE

DeYoung Museum Site Location Restudy

		WEEKDAY		SATURDAY	
	TOTAL SPACES	PEAK ACCUMULATION	SPACES VACANT	PEAK ACCUMULATION	SPACES VACANT
Golden Gate Park Site	828	552	276	621	207
Mid-Embarcadero Site	3389	2763	626	1001	2388
Transbay Terminal Site 1	5420	4841	579	509	4911
Transbay Terminal Site 2	5797	5198	599	475	5322
Broadway/Embarcadero	972	827	145	170	802

Notes: Excludes private facilities not open to the public
Includes facilities which currently are closed on Saturdays

EXHIBIT 2.1d


NORTH POINT
CHESTNUT
LOMBARD
UNION
COLUMBUS
KEARNY
EMBARCADERO
HYDE
CLAY
SUTTER
FILLMORE
PRESIDIO
CALIFORNIA
CLEMENT
GEARY
BALBOA
25TH
PARK PRESIDIO
ARGUELLO
DIVISADERO
HAYES
VAN NESS
HAIGHT
MISSION
2ND
3RD
4TH
BRYANT
HARRISON
KING
MARKET
CARL
IRVING
JUDAH
COLE
16TH
18TH
CASTRO
CHURCH
MISSION
20TH
3RD
NORIEGA
24TH
POTRERO
FOLSOM
TARAVAL
CORTLAND
BAYSHORE
SLOAT
BOSWORTH
HENRY
SILVER
PALOU
OCEAN
19TH
SAN BRUNO
MANSELL
3RD
HOLLOWAY
PHELAN
SAN JOSE
MISSION
PERSIA
BROAD
GENEVA
VISITACION

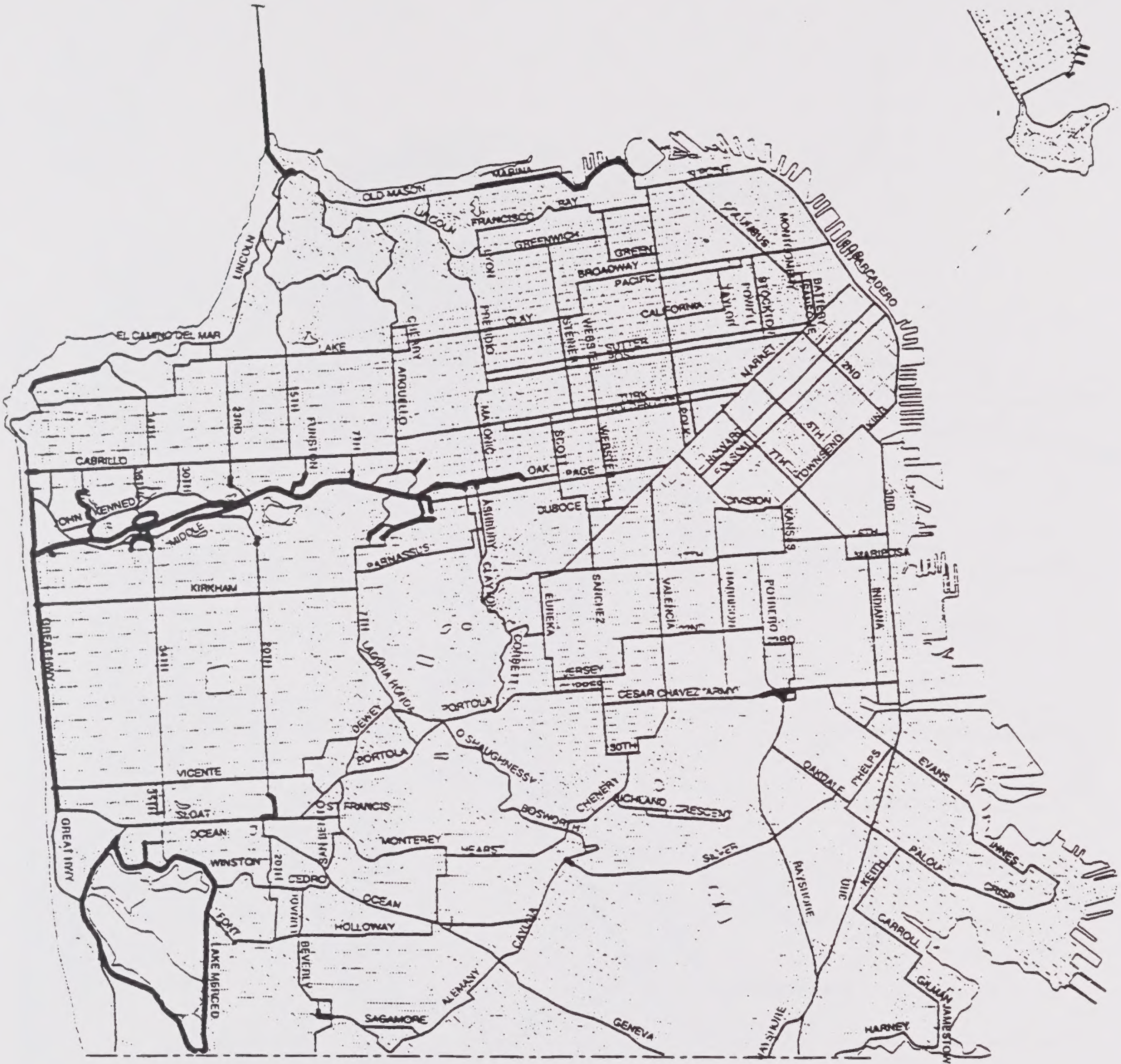
NEIGHBORHOOD PEDESTRIAN STREETS

Map 12

━ Neighborhood Commercial Street

─ Neighborhood Network Connection Street

EXHIBIT 2.1e


OLD MASON
MARINA
BAY
LINCOLN
FRANCISCO
GREENWICH
GREEN
BROADWAY
PACIFIC
CALIFORNIA
CLAY
SUTTER
EL CAMINO DEL MAR
LAKE
CABRILLO
JOHN F. KENNEDY
MIDDLE
OAK
PAGE
DUBOCE
PARNASSUS
KIRKHAM
GREAT HWY
VICENTE
SLOAT
OCEAN
WINSTON
CEDRO
HOLLOWAY
BEVERLY
LAKE MERCED
SAGAMORE
MONTEREY
ST. FRANCIS
PORTOLA
DEWEY
LAGUNA HONDA
CLAYTON
O'SHAUGHNESSY
BOSWORTH
CHENERY
RICHLAND
CRESCENT
SILVER
ALEMANY
GENEVA
CAYUGA
CESAR CHAVEZ "ARMY"
JERSEY
30TH
EUREKA
SANCHEZ
VALENCIA
HARRISON
POTRERO
INDIANA
MARIPOSA
17TH
DIVISION
KANSAS
HOWARD
FOLSOM
7TH
5TH
2ND
TOWNSEND
KING
3RD
MARKET
POLK
FELL
WEBSTER
SCOTT
MASONIC
ARGUELLO
FUNSTON
7TH
23RD
34TH
30TH
19TH
20TH
CHERRY
LYON
PRESIDIO
STEINER
POWELL
TAYLOR
STOCKTON
MONTGOMERY
COLUMBUS
BATTERY
SANSOME
EMBARCADERO
OAKDALE
PHELPS
EVANS
INNES
PALOU
CRISP
KEITH
CARROLL
GILMAN
JAMESTOWN
HARNEY
BAYSHORE
OTIS
DELANO
ASHBURY
CORBETT
FONT
SAN JOSE

BICYCLE ROUTE MAP

Map 13

— Citywide Bicycle Route

━ Bicycle Path and/or Special Treatment

NOTE: This map was developed in cooperation with the Department of Parking and Traffic's San Francisco Bicycle Plan, which will include additional information on specific segment treatments and route designation numbers.

during daylight hours, but not so during hours of darkness.

Bicycles

As can be seen in Exhibit 2.1e, designated bicycle routes provide direct access to the Broadway/Embarcadero site along both Broadway and The Embarcadero; and to the Mid-Embarcadero site along The Embarcadero (the Battery Street Bicycle Route is also one block away). The Transbay Terminal site does not have immediate accessibility from a designated Bicycle Route, but three routes (Market, Howard and Second) are within one block from the site. For the Golden Gate Park site, only Kennedy Drive in the vicinity of the site is formally designated a bicycle route; however, the whole park by its very nature can be considered to be conducive to bicycle travel.

Measure: *Dependence upon arteries with adequate vehicular capacity not lessened by points of congestion, with immediate access to at least two major streets*

Because conditions are considerably different, we have subdivided this category into two conditions, Weekday and Weekend.

Weekday

Since the museum opens after the morning peak, the critical time is the evening peak hour. Examination of traffic levels of service from various reports indicates only a few intersections at levels of service worse than 'D'. Observations, however, indicate very typical congestion points that affect all the downtown sites in the evening rush hour:

1. The First Street/Battery Street corridor is backed-up from the Bay Bridge about 50% of the time. This directly affects virtually all traffic that would need to access the Transbay site.
2. To a lesser extent, traffic is also backed up on the Embarcadero going both northbound and southbound. This affects traffic going to the Bay Bridge from the Broadway/Waterfront and Golden Gateway sites.
3. Traffic is backed up on Broadway virtually every evening from the Broadway tunnel back to Sansome Street. This affects traffic from the Broadway site going west and north.

The Golden Gate Park site is less affected during the week than the downtown sites. The only intersection cited in the recent Park EIR as having an unsatisfactory level of service was Fulton and Stanyan (at 'E'). However, traffic going both north and south from the Park will encounter slow conditions on both 19th Ave. and Park Presidio.

Weekend

The downtown sites do much better on the weekend when most museum traffic occurs. The San Francisco Waterfront Plan EIR shows that the Broadway/Embarcadero intersection is slightly worse on weekends than weekdays but that is the only intersection where this occurs.

The Golden Gate Park EIR shows that Sunday traffic is slightly better than weekdays at area intersections. However, JFK Drive is closed on Sundays and may be on Saturdays as well, so obviously vehicular access to the current museum is impaired.

Measure: *Number of points of public access, including pedestrian access*

[Site design issue which cannot be evaluated by WSA at this time]

Criterion 2.3 **Assure the Museum is Located Within Walking Distance of Transit Stop or Station Which, with Parking for Private Vehicles, Can Deliver a Substantially Increased Number of Museum Visitors**

Measure: *See Criterion 2.1, above.*

This topic is discussed under 2.1, above in detail. From a capacity standpoint, transit providers typically have significant excess capacity at off-peak times. During transit peak hours, it is likely that visitors to downtown sites will be traveling in reverse-commute directions, and sufficient capacity will be available for a substantial number of new visitors.

Criterion 2.4 **Assure that Museum is Located Within Walking Distance of Parking Spaces and/or Garages Which, with Public Transit, Can Accommodate the Vehicles of a Substantially Increased Number of Museum Visitors**

Measure: *On-site capability of off-street parking for 500-900 cars either in separate structure, or part of museum building, or in nearby existing parking areas*

On-site capability for off-street parking is a site design issue and cannot be evaluated by WSA at this time. As presented above, in Exhibit 2.1c, no site has 900 vacant near-by spaces on a weekday (but it is doubtful that such capacity would ever be required). All downtown sites could accommodate approximately 500 additional vehicles on a weekday and over 900 on a weekend, except for the Broadway/Embarcadero site. The Golden Gate Park site could not accommodate even 500 spaces on a weekday or weekend within reasonable walking distance.

Criterion 2.5 **Assure That the Functional and Operational Needs of the Museum Are Met for Access, in Terms of Transfer and Delivery of Works of Art, Supplies, and Other Goods and Equipment**

Measure: *Existence of separate rights-of-way and needed turnaround areas for truck loading and other internal museum needs*

As discussed above, plans for the Broadway/Embarcadero, Mid-Embarcadero and Golden Gate Park sites indicate exclusive or semi-exclusive rights-of-way for delivery and unloading activities. Sufficient detail has not been developed to evaluate the adequacy of these facilities at this time. Access to the Transbay Terminal site for delivery and unloading also has not been developed in sufficient detail for evaluation by WSA at this time.

Criterion 7.2 **Ability of Site to Optimize Revenues by Attracting Visitors for Viewing Art, Patronizing the Bookstore and Cafe, and Event Rental, Within the Capabilities of Likely Visitors to Afford Admission and Purchases (by Assuring Ease of Access, Public Awareness and Visibility, and Projecting an Inviting Museum "Face")**

Measure: *Proximity of hotels and other cultural/educational facilities*

Exhibit 7.2 lists the number of hotel rooms within a half-mile and one-mile radius of each site. As can be seen, the downtown sites have from 1,900 to 3,400 hotel rooms within a one-half mile radius, and 11,000 to 20,500 rooms within a one-mile radius, with the Broadway/Embarcadero site at the low end of this spectrum and Transbay Terminal site at the high end. The Golden Gate Park site would have no hotel rooms with a one-half mile radius, and only 119 within a one-mile radius.

Criterion 8.1 **Increase Compatibility with the Surrounding Area**

Measure *Points of conflict with traffic movements*

The potential for conflicts with other traffic movements will primarily arise during periods of peak arrival and departure of persons accessing the site by private automobile. Since parking locations have not been established, this measure cannot be evaluated at this time.

Exhibit 7.2

PROXIMITY OF HOTEL ROOMS

DeYoung Museum Site Location Restudy

	Hotel Rooms Within	
Site	1/2 Mile	1 Mile
Golden Gate Park	0	119
Mid-Embracadero	2105	15199
Broadway/Embarcadero	1887	11017
Transbay	3427	20587

Criterion 8.4 Increase in Revenues for City

Measure: *Increase in Muni usage*

The downtown sites are expected to increase the share of persons using public transit, which will result in a slight increase in revenues to the City. Based on estimates of mode split developed in Exhibit 2.1a, a downtown site is projected to generate approximately 38,000 more transit riders (76,000 more one-way trips) annually than a Golden Gate Park site. Assuming a full Muni fare is paid for 50 percent of the trips (the remainder assumed to be pass, senior/youth fare or transfer), up to $38,000 in additional Muni revenue could be generated by a downtown site.

U.C. BERKELEY LIBRARIES

C124916632